RURAL WOMEN IN EDUCATION

A Study in Underachievement

PREM LATA SHARMA

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Preface

National Policy on Education 1986, has emphasised the removal of existing sex disparities and to equalise educational opportunities for all without any discrimination. Education being an instrument for social change will be used as an agent to bring a change in status of women. The educational facilities will be planned in such a way that the accumulated distortion regarding the status of women in the past could be neutralised.

The removal of women illiteracy will not only help in universal enrolment and retention of children in the age group 6-14, but also will help in the preservation of the talents of women. For planning suitable educational facilities both in rural and urban areas requires a lot of research in the area of women education. The figures show that the illiteracy rate among rural women is more than the urban women. The enrolment and retention particularly of rural women is very difficult because of the poverty and illiteracy of parents, social taboos and nonavailability of adequate educational facilities. Due to these problems they tend to drop out from the system. The education planning for rural area is also insufficient and unable to contribute much towards women's equality. For conservation of academic talents of rural women which is equally important for the better growth and development of family and nation as a whole, the nation requires to plan educational facilities more meaningfully and the problem of talent loss needs to be explored intensively and exclusively. The factors related to academic underachievement can be identified and a proper remedial education can be planned for this group. This study came in response to this need and has attempted to explore intensively and exclusively academic and non-academic factors influencing talent loss among rural women.

This book is divided into seven chapters. The emphasis of each chapter is toward exploring and planning of educational facilities which are most appropriate for the education of this disadvantaged group.

The main objective of this book is to lucidly present the concept of talent loss and offer guidelines for planning corrective and educational facilities for girls in rural areas.

While writing this book formal and informal interaction took place with various professionals working in this area. I express my sense of gratitude to them for stimulating my thinking on this subject. My special thanks are due to Dr. A.K. Srivastava, Professor-cum-Deputy Director, Central Institute of Indian Languages, Mysore, for providing all necessary guidance for completing this book. I also owe my thanks to the authorities of CIIL and academic colleagues at NCERT for helping me at various stages for completing this task.

Prem Lata Sharma

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1

Context and Overview

The Context

A nation's march towards progress and prosperity will only remain a dream, its aspirations unfulfilled and unrealised, till women actively participate in all the developmental activities of that country. To emphasize the importance of women's education in this context is to emphasize the obvious. Even as a housewife, an educated and enlightened mother can significantly assist in reducing the incidence of illiteracy, poverty, ignorance and ill health of our youngsters. But their roles transcend the frontiers of their immediate surroundings. If given proper facilities and encouragement, Indian women can participate in all the national activities on an equal footing with men. It is therefore not at all surprising to find this aspect stressed in all the reports of the various commissions and committees on education. The Report of the University Education Commission even goes to the extent of stating, "If general education has to be limited to men or women, that opportunity should be given to women, from them it would most surely be passed on to the next generation.[1] Similarly, in the Report of the Education Commission has been stated that ". . .for full development of our human resources, the improvement of homes and for moulding the character of children during the most impressionable years of infancy, the education of women is of even greater importance than that of men."[2]

Even the National Policy on Education has emphasized the importance of educating women by stating, "The removal of women's illiteracy and obstacles inhibiting their access to and retention in elementary education will receive overriding priority, through provision of special support services, setting of time argets, and effective monitoring." The policy even emphasized that the spread of literacy among women could help to achieve the expected target of Universalisation of Elementary Education.[3] The spread of education among women in our country is still very limited in spite of all the keen interest shown by our great educationists in the problem of women's education, and the bright recommendations made by them. It is apparent from the Census Report that the literacy among women is much lower than literacy among men and this gap goes on increasing with the increase in the level of education. Though the percentage of literacy amongst women improved from 7.93% to 24.82% during 1951 to 1981, yet the absolute number of illiterate women have increased during this period from 158.7 millions to 241.7 millions. Women comprise 57% of the illiterate population and 70% of the non-enrolled children of the school-going age are girls. According to MEC report, the percentage of female literates in rural areas was 13% as against 34% for males and 43% for females in urban areas. The number of female goers to school in rural areas is also very low as compared to rural males and urban females.[4] As per census report the percentage of school-going rural females age-wise is as follows:

TABLE 1.1
Percentage of Rural Females Attending School in 1981

Age group	5-9	10-14	15 and above
India	25.83%	29.88%	17.57%

From the above-mentioned statistics it is apparent that the enrolment in the age-group 10-14 is higher than 5-9 and 15 and above in rural areas. The cause of low enrolment at primary and secondary levels may be due to poverty of the parents, social taboos and non-availability of adequate educational facilities, as girls between 5-9 years assist their parents in looking after the younger children and the girls above 15 years either help the parents in the fields/factories in earning their livelihood or are married. The low rate of enrolment at primary level results in the problem of drop-out and stagnation in women's education on one hand and the academic talent loss on the other, because the fundamental lacks make them underachievers.

Due to these problems our education system has not been able to make sufficient contribution towards women's equality. The conservation of academic talents of women is very important for better growth and development of the family and the nation as a whole. The under-achievement among women leads to drop-outs and stagnation, as also hampers the growth and development of their families. The problem of drop-out among rural women seems to be due to environmental barriers. Thus, it is obligatory on any society not only to identify the factors related to high stagnation and drop-out among women, but also to explore the factors responsible for the academic under-achievement which may be the basic cause for drop-out and stagnation.

Magnitude of the Problem

The incidence of talent loss resulting in academic under-achievement has become a chronic phenomenon in our schools. The problem is gigantic. It is growing. It has to be checked. Therefore, it deserves the special attention of all those who are directly or indirectly concerned with the education of our children.

The National Education Association of America reports that "about 15% to 25% of the gifted students in most of the schools fall in the category of underachievers."[5] Hill also reports that "Every secondary pupil in an American classroom today according to some tallies is not performing up to his abilities. It has been estimated that one of every four youngsters is in serious trouble; a year and a half or more below his grade level is losing more ground each time, he is promoted."[6] Studies conducted in India have also reported the incidence of under-achievement. This problem, therefore, is not only confined to American Classrooms or to gifted children alone, rather it is a worldwide phenomenon occurring in all types of children.

In the above context, it is a matter of great gratification that this all pervasive problem of educational underachievement has been subjected to thorough examination by studies conducted in India. However, the factors related to educational underachievement among girls yet remain to be systematically explored. At the top of this, the problems of rural girls have not been intensively and exclusively studied. Most of the studies have attempted to study girls either from rural and urban settings together or boys and girls from urban and rural settings. The rural settings and urban settings in India differ qualitatively and therefore, there is a need for the thorough exploration of the network of forces at work in the former settings.

Concept of Underachievement—Fact or Artifact: An Overview

The studies conducted to find out correlation between intelligence and achievement show that the former explains only half the variance in the achievement, the model value of correlation being around 50%. The remaining half has been attempted to be explained on the basis of non-intellectual factors like personality, motivation, study habit and several other factors. All these factors may add or hinder the expression of potentiality into achievement, giving rise to the four patterns of achievement:

underachievement : when the actual achievement is less than the aptitude based on expectation;
overachievement : when the actual achievement exceeds the aptitude-based expectation;
highachievement : when the actual achievement is commensurate with the aptitude-based high expectation;
lowachievement : when the actual achievement is commensurate with the aptitude based on low expectation.

The classification given above makes it clear that those differential patterns emerge when we compare the actual achievement with the expected level of achievement. If only actual achievement of a student is kept in view, then apparently, there may not be any difference between under and lowachievers, and over and highachievers. However, when we take into account the scholastic aptitude based on expectations of achievement, the difference between under and lowachievers emerges clearly, the former achieving poorly, despite the potentiality to achieve, as measured by scholastic aptitude test. This raises the important question as to why two pupils possessing almost the same high scholastic aptitude achieve with marked difference, one achieving high and the other low. This is in spite of the fact that intelligence in comparison to other factors influencing achievement, shows the highest positive correlation with achievement.

In fact, it has led to the facile conclusion that intelligence alone determines achievement.

However, obviously, intelligence is not the only factor in achievement and other factors also interact to help or hinder the full realization of potentiality in the form of socially approved educational achievement. Therefore, though under and high-achievers are expected to achieve equally high, the former, hindered by several other factors, fail to do so.

Studies on underachievement attempt to investigate the factors related to the poor achievement of underachievers. Since intelligence correlates highest with achievement, it is used as a predictor variable to predict the expected achievement level of underachiever and then an attempt is made to find out the contribution of several relevant factors to the poor achievement of underachievers. This is done on the assumption that underachievement is a problem for which meaningful explanations exist. However, the meaningfulness of the concept of underachievement has been questioned by many researchers.

Many researchers argue against the concept of academic underachievement, because according to them, the difference between the actual achievement and measured aptitude score for achievement is due to the error in measurement, criterion heterogeneity and due to the intervention of modifiable and unmodifiable factors.

Error of measurement according to the researchers includes random chance variate factors which vary independently from one testing situation to another and make it impossible to get identical results from the two testing situations of the same function due to the differences in test motivation, difference in the tasks to be performed and various factors which operate independently in the two testing situations. Due to the errors of measurement in both the predictor and criterion variables, some discrepancy between the two is inevitable. This error of measurement introduces a systematic bias in studying the underachievers through regression effect. Regression takes place where the correlation between the two variables is less than perfect and the students who are scoring high on one variable will tend to regress back towards the mean of the population on the other variable and vice versa. A failure to recognise the regression effect has raised a number of questions about the meaning of this concept.

Therefore, the discrepancy found on the basis of two test scores, becomes an artifact of regression effect.

The criterion measure is another source of discrepancy between actual achievement and predicted achievement because of its heterogeneity due to mixing of the grades of different schools, colleges, universities or boys and girls together. Thorndike studied the discrepancy between scholastic aptitude and grade point average and defined the under and overachievers selected from engineering and agricultural school; overachievers and the number of underachievers was more in the school of engineering. Thus the mixing of the grades of different schools or colleges introduce heterogeneity in the criterion variables.[7] Similarly mixing of boys and girls together for the study of underachievement or overachievement may introduce heterogeneity in the criterion. It will identify the girls as overachievers on some variables and the boys as underachievers on other variables. There are research evidences that the girls are more interested in verbal and artistic activities where as boys are more interested in mechanical and scientific activities. Therefore, the test of verbal or artistic ability may underestimate the boys and the tests of mechanical and scientific aptitude may understimate girls. Thus, they will be under and overachievers because of the heterogeneity of the criterion variable.

Most of the researchers are of the opinion that both the unmodifiable and modifiable factors should be considered for predicting the academic achievement. The use of both these factors into a team of predictors to predict achievement and to study the relationship of the discrepancy scores with those factors in the individual, which we can modify or hope to change, but there is no use to study the unmodifiable factors like sex, race and socio-economic background, as these cannot be modified. These variables should only be restricted to predict the achievement. We cannot change the label of sex, race, socio-economic status and cultural impact of the individual, but can certainly change the impact of these factors on the achievement. If we discover that a particular race produces more underachievers, even though we cannot change the race of the underachievers we can certainly change the low academic motivation of underachievers belonging to that race, in the interest of long-range educational goals. Similarly, thecultural expectations, which become a major source of differences between the two sexes could be changed gradually, though their biological differences could not be.

From the above, it is clear that the concept of underachievement is fact and not artifact. Thorndike has overemphasized the afore-mentioned problems for which adequate remedies are available, at the cost of something that is very real, viz., the non-intellectual factors in underachievement. The concept of underachievement stands on firm grounds, for which meaningful explanations could be found in the individual himself and his environment.

The error of measurement could be considerably reduced by taking all the possible precautions in data collection and those which still remain could be prevented from reducing the sensitivity of the design, by increasing the size of the sample. With a less sensitive experimental design, it will be necessary to use larger number of cases, in order to achieve the desired power, in the final testing of our hypothesis.[8] The systematic bias, introduced through regression effect, could also be properly dealt with by using proper procedure for identification, by using a team of predictors, by taking average of several examinations' marks of academic subjects spread over several years. The heterogeneity of the criterion variable can also be controlled by taking the group of same sex from the schools, which are following the same syllabus, same procedure of examinations and the same method of grading the students, under the same medium of instruction. Thus, these precautions would certainly minimize the effect of regression and the error of measurement in predictor and criterion variables.

The study of the modifiable factors in relation to underachievement becomes educationally more purposeful because, if some variance remains, that has not been accounted for by abovementioned three categories, then we do have a genuine educational problem, and the source of discrepancy is due to modifiable factors. Therefore, the discrepancy between actual achievement and expected achievement should be studied in relation to modifiable factors, so that the residual variance which was not accounted for by three categories, can be located.

From these statements, we cannot deny the meaningfulness of the concept of underachievement, but at the same time potential investigator should be conscious of the problems coming in this area.

Factors Attributing Towards the Problem—An Overview

The academic achievement is a complex behaviour; therefore, it is not yet known definitely, what determines the level of achievement of students. Intelligence is highly related to academic achievement and explains about 50% of variance in achievement. Therefore, the rest 50% of variance can be explained by the study-related and non-intellectual factors. For our convenience, we will group the factors studied in various works in relation to academic underachievement, into two categories, namely, study related and non-intellectual factors and will review their findings.

A. Study Related Factors

(i) *Language ability*: Language is both a subject and a medium in the school curriculum. As a result, it plays a pivotal role in the school curriculum. Even for the study of non-language subjects, like science and social studies, the learning material and above all, the text books for these subjects themselves have to be in some language. Therefore, if the language-skills have not been developed up to the level required, for successful adjustment to the school curriculum, there is a likelihood that the child will be a poor achiever despite his potentiality to do well. McNamara reported that Irish Primary School children, whose home language was English, but who were instructed through the medium of Irish, were eleven months behind in arithmetic achievement, as compared to other Irish children taught through the medium of English.[9] Cummins also pointed out that continued difficulties with language, over a prolonged period of time are likely to mean that a bilingual child's interaction, with an increasingly symbolic environment, will not optimally promote his cognitive and academic progress.[10]

From the above-mentioned statements, it becomes clear that the role of language ability is very important for understanding the clear picture of one's school achievement. Therefore, the level of language competence of the child should also be considered. Sometimes, the defective development of language-skills in the child makes him an underachiever. When the children enter the school, they are generally competent in the spoken skill of their native language, other skills of language have to be systematically developed to meet the academic demands of the school. As Lambert et al have pointed out" "... educational failure is simply the result of inability to make use of one's language for learning."[11] Thus, for better achievement, the students have to learn the linguistic skills systematically.

Reading is one of the most important skills of language. A good knowledge of vocabulary, its proper use and ability to spell words correctly are the other ingredients, which also form part of the reading skill, related to achievement. Moreover, reading with speed and good comprehension are other important factors influencing pupil's achievement. In our school system, reading skills are taken to develop as a matter of course and there is no curricular provision for the separate teaching of reading skills. As a result, the child may develop wrong methods of reading, which may cause underachievement at later stages. In fact, this may help the underachievement to accumulate in every successive class, till the child becomes too incapacitated to advance any further. The poor study skills and reading disabilities of the underachievers are related to their poor achievement and if not prevented timely, they go on inflating, grade by grade, so much so that they reinforce the pupil's choice for poor achievement. This creates a vicious circle. The poorer the study skills, the more the pupil's choice gets confined to poor achievement. The personality and motivational factors also act as inner forces confining underachiever's choice of poor achievement, the choice overtly operates through the study and reading skills. Together they complete the network of forces contributing in concert, to the poor achievement of the underachievers. Studies conducted in this area reported that highachievers possess better language skills than underachievers.[12'13] But Glavin John P. and Annestley found no difference between over and underachievers on reading comprehension and vocabulary skills.[14] Mumpower and Riggs have reported that some students were found to be overachievers on role learning, like word accuracy, but were failing to do as well in areas which required higher level of mental maturity, e.g., comprehension.[15]

Though some studies reported to the contrary, it is very clear that reading skills and study habits are important determiners of achievement and it would be worthwhile to compare on these variables, the high and underachieving girls coming from rural settings, where the chances of the neglect of these skills are much more.

(ii) *Study Habits*: The study habits of the students actually deal with the planning of study work at home and school. It is an important factor in achievement, as many studies reported positive relationship between study habits and academic achievement and also found that achievers possess better study habits than underachievers. Some of these studies also have used study habit to predict achievement and reported negative results. Some studies have reported that there is significant difference between the study habits of achievers and non-achievers and there is significant correlation between study habits and academic achievement.[16,17]

On the basis of these controversial findings, it is difficult to draw any generalization regarding the relationship of study habit and academic achievement.

B. Non-Intellectual Factors

(i) *Achievement Motivation*: Achievement motivation plays an important role in the academic achievement of the students who differ in their motivational patterns. Some have high level of achievement motivation and therefore, strive hard to achieve high. On the other hand, some may have low level of motivation, and therefore, may not work hard to achieve high; probably high achievement has lost all the meaning and flavour associated with it. Still, others may set high academic goals, but fail to live up to the standards set by them, possibly, because of the obstructing influence of factors, like poor study and language skills. The findings on this variable, however, are very conflicting, as some of these studies report significant relationship between achievement motivation and academic achievement and also report significant difference between achievers and non-achievers. Again some of the studies report that girls have higher level of achievement motivation than boys. On the contrary, some studies have reported that there is a very low correlation between achievement motivation and academic achievement and some of them have found no significant difference in the achievement motivation levels of achievers and non-achievers. In some studies, boys have been found to have significantly higher achievement motivation than the girls.

As will appear from the above discussion, the findings on the relationship between achievement and motivation, or on the motivational levels of high and underachievers, are controversial, thus not permitting any clear-cut conclusion. It may be possibly, because of different techniques adopted for measuring motivation, or because of the different sample studies. In this context, it becomes relevant to find out the motivational patterns of high and underachieving girls coming from rural environment, who radically differ from urban ones in the form of encouragement given and facilities offered to girls for attaining high academic achievement. It is a well known fact that cultural expectations and social norms set up by rural society for girls are very different and there is no social premium on high achievement. It would not be surprising to find the entire school-going girl population getting socially conditioned to develop low academic motivation and to attach less importance to getting high grades. Still, some among them are able to overcome the barriers and are able to achieve high, while some fail to overcome them. If so, it would be interesting to find out the network of forces at work in the cases of high and underachieving girls.

(ii) *Total Adjustment Pattern*: The adjustment patterns are reported to be significantly related to achievement. The underachievers have more problems of adjustment in emotional, school, health and family relationship than highachievers. On the contrary, some studies have reported that neither is there significant relationship between adjustment patterns and achievement nor is there any significant difference in the adjustment patterns of achievers and non-achievers. Riddling has found that the underachieving females are socially more adjusted than the underachiever males.[18] But Dhaliwal reported that underachiever males were adjusted in social areas but poorly adjusted in home, school and emotional areas.[19]

(iii) *Personality Traits*: Personality traits have been found to be associated with differential patterns of achievement. Some of the traits are discussed below:

(a) *Inferiority Complex, Hostility and Rationalizing Tendency*: The underachievers have been characterized with more feeling of inferiority, more hostility and rationalizing tendencies than the high and overachievers. But Easton's study did not find the underachievers possessing the feeling of inferiority more than the high and overachievers.[20]

(b) *Extroversion*: Altus has found that extroversion was found to be associated, with underachievers.[21] Some other studies reported that extroversion was related with lack of concentration for academic work and the introversion was found to be associated with underachievement. Riddling found the underachieving girls to be more extrovert than the boys and the highachieving girls.[22]

(c) *Insecurity, Immaturity and Impulsiveness*: The underachievers as compared to highachievers are more insecure, immature and impulsive. The female underachievers are more impulsive, reactionary and emotional than the male underachievers. Insecurity is negatively related to academic achievement.

(d) *Anxiety*: Anxiety is related to differential patterns of achievement. It is found by some to be facilitating academic attainment of highachievers. But some other studies reported that anxiety is negatively related to achieving and the girls were more anxious than boys.

On the basis of the above reported findings, it is difficult to draw any conclusion about the specific personality traits and total adjustment patterns of under and highachieving boys and girls.

(e) *Biographical factors*: Some of the biographical factors have been found to be significantly related to the problem of underachievement. These are as follows:

(1) *Family*: The family is the first social institution with which the child interacts, which not only shapes his personality but also helps to develop in him/her interest in learning within the family, there can be a number of variables, like familial relationship, economic condition of the parents, educational level of the parents, family intactness, number of members in the family, birth order of the child, parental attitude towards education, patterns of child rearing etc. influencing the personality and

academic achievement of the child. Several studies have reported that family and academic achievement are positively associated. It is also being reported by several studies that underachievers face more number of problems in the area of family than high and overachievers and the underachieving students were found to be rejected by their mothers.

(2) *Economic condition*: The educational level and occupation of the parents are associated with academic achievement and the underachievers face more economic problems than high and overachievers. To the contrary, some studies have found no significant relationship between socio-economic status of the parents and academic achievement, i.e. under and highachievers do not differ in their economic status. They also reported that there is no effect of socio-economic status on high achievement, but high achievement motivation and good study habits affect it. Thus, there is no clear picture how far the economic condition of the parents influence the achievement. However, these variables should be taken into account for exploring the factors responsible for under and highachievement.

(3) *School attended*: The school plays an important role in motivating the students to achieve higher grades. And if a school does not bother about the problems of the child faced in school, then it may cause underachievement. Therefore, the number of problems faced by a student in the area of school should be taken into account, while explaining the factors related to underachievement. Some of the studies have reported that the type of school attended, poor teacher-pupil relationship, large size of the class, attitude of the teachers and absence from the school are significantly related to academic achievement. The underachievers face a large number of problems in school than highachievers and most of the children were failing, because they attended a school that did not correspond to their intelligence. They also suggested that if these children would have been given early guidance and would have been allowed the opportunity to change their academic programmes, they might have achieved according to their level of intelligence.

Conclusion

From this, it it difficult to state how much the school contributes towards the academic achievement, but its importance as a variable for such a study cannot be ignored. The above discussion, regarding some of the biographical factors, once again show that the findings on the whole are too controversial to draw any clear cut conclusion, in order to know to what extent these variables are contributing towards under and highachievement. However, these variables should be taken into account for exploring the factors responsible for under and high achievement for the present study.

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2

Procedures and Methods for Selecting Disadvantaged Achievers

The Context

It is common belief that the disadvantaged children in our educational system, by and large are understood as slow learners and their educational needs and potentialities remain unmet. With the result, they become a case of drop-out and stagnation. To explore factors attributing to these problems, a functional framework is required. In this context, it is essential to review the literature on definition and procedures used to explore this area.

The definitions given for talent loss differ from study to study, because of the different procedures adopted for selecting the underachievers. While there may be agreement in regard to factual definition, as given by Shaw that the underachiever with superior ability is one, whose performance as judged either by grades or achievement test scores is significantly below his high measured or demonstrated aptitudes or potential for academic achievement.[1] The operational definition given by Thorndike poses a major source of controversy. He defines the underachievement, "The discrepancy of actual achievement from some predicted value based on the regression equation between aptitude and achievement."[2] But Goldberg Raph, and Passow defined it as "... those students who score in the top decile (or beyond 1.5 standard deviations above the mean) on tests of intelligence and academic aptitude but whose academic performance is at or below the median (or mean) for the general age group."[3] And Srivastava has defined it as "Those who were in the top 27% of the population in ability and below the average in achievement."[4] The difference between the factual and operational definitions, stem from the fact that the achievement in relation to expected achievement, in factual definition is a single continuous variable which differ only in degree, but not in kind. But in operational definitions, the fixed divisions on both the continua are decided. The fixing of the cut off points on both the continua create the following problems:

(i) The selected group of underachievers may belong to different levels of ability, e.g., there may be both severe and mild underachievers who may possess different characteristics.

(ii) The criteria selected for dichotomizing the groups of under and highachievers do not take into consideration the merits of the individual cases. Thus, dichotomized groups may be contaminated by the presence of persons, who may also belong to some different group, e.g., the selected group of highachievers may include hidden underachievers, as they may still possess the unspent reservoir of potentiality.

Predictor Variable

For identifying the under and highachievers, two types of tools are needed, one for predicting the expected achievement and another for the measure of actual achievement. Generally, scholastic aptitude has been used for predicting the expected level of achievement, whereas the non-intellectual and study related factors like personality motivation, study habits and reading ability have been used for explaining the causes of discrepancy. In addition to scholastic aptitude some of the studies have also used teacher's judgement and study habit for predicting the achievement. But Thorndike considers the problem of underachievement, as just a special case of the general problem of multivariate prediction, where our purpose is to predict achievement accurately and minimize the error in prediction. However, scholastic aptitude has generally been preferred, because of the following reasons:

(i) The addition of more than one predictor would unnecessarily create confusion about their specific relationship with the criterion measure. Moreover, the analysis of a large number of predictors would also pose problems.

(ii) The relationship of other predictors with the criterion measure is not yet very clearly defined. Therefore, the use of such additional predictors may create the problem of overlapping.

(iii) As already reported scholastic aptitude highly correlates with criterion measure and explains nearly 50% of the variance in achievement. Therefore, it is possible to use scholastic aptitude as the basis for predicting expected level of achievement, and the other half of the variance may be explained by the non-intellectual and study-related factors.

Thus, Thorndike's point of view does not change the basic position. For the sake of accurate prediction, it simply promotes some of the predictor variables, from the category of explaining the discrepancy to the category of predicting the discrepancy. So nothing is lost, if we use one predictor variable, which has highest correlation with achievement, i.e., scholastic aptitude, for predicting achievement and then use other predictor variables to explain the factors responsible for the discrepancy between the actual and the expected achievement. Even Cronbach has recommended the use of that variable as a predictor, which seems to be significantly correlated with achievement.[5]

Though scholastic aptitude has been preferred as predictor variable by studies conducted in this area, there is a difference in the pattern of intellectual ability measured. Some studies have used only verbal tests of intelligence, some others have used only non-verbal tests of intelligence and a very few have used both verbal and non-verbal tests of intelligence for predicting the expected level of achievement.

There are conflicting reports about the comparative verbal and non-verbal test scores of under and highachievers on the one hand and boys and girls on the other. And the underachievers were reported to perform better on non-verbal and highachievers on verbal tests. On the contrary, Murukawa reported that male underachievers scored lower than the male highachievers on non-verbal tests of ability.[6] Similarly, study conducted by Kamath reported that girls perform better than boys on verbal tests of intelligence.[7] But Greenberg et al did not find any such sex difference on intellectual abilities.[8]

From the above findings, it is difficult to draw a clear relative performance of the underachievers and highachievers and boys and girls on verbal and non-verbal tests of intelligence. In this context, it appears that a better strategy would be to use both types of tests for predicting the expected achievement levels of under and highachievers.

Limitations

Though the scholastic aptitude has been used by most of the studies to study the discrepant achievement patterns, yet it has been reported to be suffering from the following limitations:

(i) The differential pattern of scholastic ability is found to be associated with disadvantaged achievers. In that case, the use of verbal tests of intelligence may underestimate the underachievers as well as the boys. Conversely, the use of non-verbal tests of intelligence may underestimate the achievers as well as the girls. Therefore, the use of a specific type of intelligence test also influences the selection of discrepant achievers. A suitable remedy will be to use both verbal and non-verbal tests as predictor variables for identifying the underachievers.

(ii) The problem of overlapping between the scholastic aptitude and the achievement test scores also put the researcher in a dilemma. If there is excessive overlapping between the two, then the resultant discrepancy may only reflect the error of measurement. If they are not related, then we cannot predict one from the other. In order to meet this situation, Thorndike's suggestion is to carefully scrutinize the cases of very high correlation, in order to avoid excessive overlap with the criterion measure.[9] Needless to say that a very careful selection of predictor and criterion variables is needed.

(iii) Doubts have been expressed about the stability of intelligence as scores and it has been argued that they are susceptible to influences by environmental and cultural factors, like socio-economic status, kinds of life experiences and also the linguistic competence of the tester. The assumption is that I.Q. represents an inborn or inherited capacity. However, some findings are against this assumption.

This is a very controversial question and Kamin has very critically examined both these points of view. He concludes that "To assert that there is no genetic determination of I.Q. would be a strong and scientifically meaningless statement. We cannot prove the null hypothesis nor should we be asked to do so. The question is whether there exists data of merit and validity that requires us to reject the null hypothesis. There should be no mistake here. The burden of proof falls upon those who wish to assert the implausible proposition that the way in which a child answers questions devised by a mental tester is determined by an unseen genotype. That burden is not lessened by the repeated assertions of the testers over the past seventy years. Where the data are at best ambiguous and where environment is clearly shown to have effect, the assumption of genetic determination of I.Q. variation in any degree is unwarranted. The prudent conclusion seems clear. There are no data sufficient for us to reject the hypothesis that differences in the way in which people answer the questions asked by testers are determined by their different life experiences.[10]

The above-mentioned limitations of the scholastic aptitude not only question the concept of underachievement, but also the meaningfulness of the predictions made by these tests. However, as argued above, the careful selection and combination of the different types of scholastic aptitude tests for predicting the expected level can offer remedy for the nature of problem mentioned above. Similarly, the influence of the environmental factors can be minimized by selecting the sample from a homogeneous socio-economic and cultural background. Therefore, the accuracy and reliability of the scholastic aptitude tests cannot be denied, for predicting the expected level of achievement, in spite of all their limitations. Even Educational Policies Commission of U.S.A. suggests that, "We recommend the use of intelligence tests in identifying gifted children and youth not because they have been demonstrated to measure accurately, the inner structure or capacities of human personality, but because they have been found to provide data from which the subsequent behaviour of an individual can be roughly predicted. The accuracy of such predictions is far from perfect, but it is accurate enough to justify use of intelligence test scores, along with other criteria."[11]

Criterion Variable

For measuring the achievement of the disadvantaged achievers generally achievement test scores are used. But most of the studies conducted in this area have used grade point

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average or examination marks over teachers' ratings, as the criterion because it is more reliable.

The general preference for grade point average or examination marks over the achievement test scores may be because of the following reasons:

(i) The average of several examination marks of a student gives a more reliable index of his actual achievement, than that of one achievement performance test score, where the possibility of chance factor is more than the average of grades spread over 2 to 3 years.

(ii) The underachievers selected on the basis of the average of marks of several examinations can be categorized into chronic and situational. But the use of achievement test score can only tell the difference of degree in underachievement, i.e., severe to to mild one.

(iii) The use of achievement test also creates the problem of overlapping between the predictor and criterion variable. The two testing situations may also cause effects of regression.

(iv) Even the number of underachievers selected on the basis of achievement test has been reported to be less than the number of underachievers selected on the basis of grade point average. The use of achievement tests alone can miss the real underachievers from the selected population. However, examination marks, as criterion measure also suffer from some limitations, which may be summed up as follows:

(a) The grade point average can also be affected by physical illness, family problems or personality clashes with a particular teacher and momentary state of the students.

(b) This method is heavily contaminated with 'social nuisances', and the error of judgement is also a source of variation in achievement.

The above shortcomings can be removed by considering the academic marks spread in several years, which can minimize the subjective influence of the teachers on grades. The consistency of grade point average has been emphasized by Nunnally, that the problem of overlapping is more between intelligence tests and achievement tests, as the contents of these tests overlap so much that it becomes difficult to differentiate the two from each other.[12] And it is due to the error of measurement. Therefore, we can conclude, that grade point average as a criterion variable

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is more appropriate and stable than the achievement test scores.

Procedure for Selection

Several procedures mentioned below have been adopted for identifying the underachievers.

(1) *Central Tendency Splits*: According to Farquhar and Payne, "The under and overachievement is determined by dichotomizing a distribution of combined aptitude and achievement measures."[13] In this technique one has to decide the cut-off point on ability continuum, as the cut-off point on criterion variables is always below the class mean. This technique has been used by most of the researchers. Shaw and McCuen used this technique and identified these as underachievers whose ability scores were falling at the top 25% of the class and below the class mean on the grade point average.[14]

In this technique, the determination of the cut-off point, entirely depends upon the arbitrary decisions of the researchers and the facilities available for research.

(2) *Arbitrary Partitions*: This technique was defined by Farquhar and Payne as "Discrepancies are determined by contrasting extreme groups in achievement—aptitude distributions and by eliminating a middle group."[15] Modified form of this technique was used by Brookover, Paterson and Thomas, who calculated the reliability estimates of both their predictor and criterion variables; on the basis of reliability standard errors of measurement for both the predictor and criterion variables were eliminated. The students who were high on aptitude and low in grade point average were identified as underachievers and the students who were high on both the variables were identified as highachievers. Gupta also calculated the percentages of scores on intelligence and achievement and then the difference between achievement and intelligence in terms of percentages was worked out. The subjects were identified as under and overachievers, if the difference was significant at any arbitrarily decided level, for example, 0.5 or 0.1.[16]

Both the techniques of central tendency split and arbitrary partitions are based on the assumption of reasonable expectation. The cut-off points on either ability or achievement continuum may be arbitrarily decided. But the principle behind both the techniques is to keep the margin of difference between ability and achievement high enough, so that the students with high ability and poor grades could be reasonably expected to be underachievers. Thus, both the techniques can be named as reasonable expectation technique, instead of central tendency splits and arbitrary partitions.

(3) *Relative Discrepancy*: Farquhar and Payne have defined this technique as follows "Grade point average and aptitude predictors are ranked independently. Under and over achievement is determined by the discrepancy between the two ranks."[17] The principle behind this technique of selection is only of simple subtraction of achievement and ability raw scores. In this technique, no cut-off points are determined on the grounds of reasonable expectation, like the central tendency splits and arbitrary partitions techniques.

As this technique of selection is based on simple subtraction of achievement and ability raw scores, so it does not seem to be a very scientific one when we consider the effect of statistical regression. Statistical regression takes place where the correlation between the two variables is less than perfect and thus, the students scoring high on one variable will tend to regress back towards the mean of the population on the second variable and vice versa. Thus, the crude discrepancy between achievement and intelligence scores will introduce a "systematic bias." Therefore, this technique is evidently faulty for the study factors related to academic underachievement. Thorndike also has stated: "This kind of a simple difference is not adequate for any analytical study of how factors other than aptitude are related to achievement."[18] The effect of regression causes problems in understanding the relationship of variables in this method, as the variables which are negatively correlated with any other variable which will be positively correlated with aptitude and vice versa.

(4) *Regression Model Selection* : Farquhar and Payne define this technique as follows: "A regression equation is used to predict achievement from aptitude measures. Under and over-achievement is then determined on the basis of the discrepancy between predicted and actual achievement."[19] Instead of studying the crude difference between ability and raw scores of achievement, this technique predicts the expected achievement on the basis of aptitude and studies the discrepancy between the

predicted and actual achievement. Formulated on the basis of correlation between the aptitude and achievement scores, the regression equation predicts the expected achievement score at any level of aptitude and once the discrepancy scores are obtained between the predicted and the actual achievement, various cut-off points, depending on individual preference, are determined to identify the underachievers.

This technique has been considered by the researchers as one of the most scientific techniques for selecting the disadvantaged achievers. In this technique, the discrepancy is found between predicted and actual achievement, which is independent of the aptitude measure. This residual is uncorrelated with the aptitude measure, for which the contribution of various non-intellecual and study-related factors can be found out. These factors can be found out to explain this discrepancy. This technique tells us typical achievement scores for individual at any given aptitude level. Some of methods like Ranking Inventories Batteries and Achievement Ratio are however, not very frequently used. The result of such studies have shown that these techniques have not only identified different groups of underachievers with no significant overlap between them, but also the number of underachievers selected by them differ. These techniques can be classified under two broad heads, one depending upon reasonable expectation for selecting the underachievers and the other depending upon difference score obtained either from the predicted and actual or from ratio or simple subtraction.

Under the above circumstances, it becomes very difficult to select any one technique, because these techniques not only select different groups of underachievers, but also the number selected by them greatly differs. However, basically the choice is between only two techniques, i.e. reasonable expectation and regression equation. The first one reasonably expects the students in the top quarter to achieve better than 50% of their classmates and if they fail to do so, they are designated as underachievers. The regression equation technique identifies underachievers on the basis of the discrepancy between predicted and the actual. Srivastava used regression equation technique and found these as underachievers, who were in the top 27% of the population in ability and below the average in achievement. His contention was that basically the difference between these techniques is not much. He commented "...whereas one bases its expectation on reasonable assumption, the other for the same goes through the lengthy procedure of building the regression equation for predicting the actual achievement. No doubt, this makes the procedure of reasonable expectation both simple and economical, as it spares the trouble of going through the various stages to find out the discrepancy."[20] It is not to suggest that the reasonable expectation technique does not suffer from any limitation. For example, the phenomenon of statistical regression combining with the error of measurement may narrow down the range of difference between the predictor and the criterion measures. However, the technique of regression equation is also not completely free from the measurement errors as a fraction (sometimes a substantial fraction) of this residual will represent measurement error, but a fraction of it may represent genuine achievement not accounted for by those factors included in the aptitude test. There are remedies available to counteract the influence of measurement error and statistical regression in the technique of reasonable expectation. Firstly, the regression effect can be minimized, when we select the students who are in the top quarter on predictor variable and below the average on the criterion variable. And moreover, the use of more than one test of ability and the average of academic marks of several years of a large sample, belonging almost to a homogeneous setting can also stand against the influence of error of measurement and regression effect, in selecting the underachievers.

Research Designs

The research designs employed by researchers in the area of academic underachievement also differ. Research design used in this area can be classified as follows :

1. Experimental
2. Prediction over time
3. Concurrent Correlation
4. Contrasting Group.

1. *Experiment Design* : It studies two groups, experimental and control. The control group has to be equivalent to the experimental group in all respects except the experimental treatment, as a task, which may be difficult to be accomplished. It

is general experience that experimental treatment has temporary effect on underachievers. This method suffers from the following limitations:

(i) The students selected for experimental and control group might not be equal in their degree of underachievement.

(ii) The experimental design is likely to be a biased one, when the students differ in their motivational patterns and do not attend to the instructions properly.

(iii) There is always the scope for contamination of the criterion variable, involving the subjectivity of the teacher's judgement about the progress. This may not preclude the possibility of a fair evaluation of these two groups, i.e. experimental and control.

(iv) It is helpful in studying the effect of only one specific type of experimental manipulation in raising the achievement. Therefore, this design may not prove to be useful for the study of several factors related to underachievement.

2. *Prediction over time*: This design attempts to find out gain taking place, as a result of experimental treatment between the initial and final measurement of achievement, which becomes a major attraction of this method. However, this method is not very popular for studying the factors related to underachievement. It may be because of the following limitations:

(i) It is difficult to determine the optimum time lapse between the initial and final levels of prediction, which has not to be either too long or too short.

(ii) The time lapse between the two levels, initial and final measurement, exposes the subjects to a variety of forces, in which the researcher is not interested and which may be difficult to control.

(iii) The group studies may create problems since all the subjects of the group have to be alike on host of variables, which do not form the experimental treatment.

(iv) The problem of overlapping between predictor and criterion measure does not spare even this method. Moreover, this design does not prove to be very economical, because it takes sufficient time gap between the two stages of measurement.

3. *Concurrent Correlation*: This design establishes relationship between two concurrently obtained measures of the variable s under study, one of them being achievement. Unlike the design

of production over time, cause and effect relationship cannot be established on the basis of this design, which only indicates the degree of relationship existing between two variables. However, this cannot be considered as a limitation of this design, since the knowledge of the existing pattern between two variables may lead to subsequent determination of cause and effect relationship.

4. *Contrasting Group*: While the concurrent correlation design studies the total sample, this design selects two extreme groups eliminating the middle group as high and underachievers or under and overachievers and compares them on selected variables. Besides, there is no difference between these two designs. The purpose in underachievement studies is to specifically investigate the factors related to deviant achievement patterns and not to only find out the relationship of the criterion measures of total sample with some variable.

This design can help to focus the difference existing between deviant achievement patterns with a "magnifying glass" and therefore, is more sensitive than the design of concurrent correlation for the study of under/highachievers. Thorndike, thus comments, "The method can provide a more sensitive test of the existence of a relationship per case completely tested than does a correlational analysis of a complete intact group. By taking cases at the extremes (assuming a linear relationship) we get cases, in which any influence will have the maximum opportunity to show itself."[21]

One limitation of this design, besides the one of overlapping between predictor and criterion measures, with which every design suffers and which is also not beyond solution, emanates from the linear or non-linear relationship existing between two variables. In the case of linear relationship, the concurrent design predicts the relationship between two variables more powerfully, than the contrasting group design, because the latter eliminates the middle group. Similarly, in the case of non-linear relationship, the study of the extreme groups only, may not show any significant difference between the two groups. In that case, if the total sample is studied, it will yield information regarding the existence of a non-linear relationship.

Despite the above-mentioned limitation, the contrasting group design has been selected for the study of underachievement, because it specifically serves the purpose behind such studies. Thus, after comparing all the four designs, the contrasting group method seems to be more appropriate for studying the factors related to under and highachievement.

Types of Underachievers

Studies on underachievement differ not only in their research designs and selection procedures, but also in the degree and type of underachievers studied. Some of the classifications reported below would show, how the underachievers differ not only in degree but also in kind, these are as under:

(i) *Chronic vs. situation underachievers*: Situational underachievement is the result of the influences, exerted by the disturbing temporary phenomenon occurring in the life experiences of the individual, like illness and sudden change in the environmental set up. On the other hand, chronic underachievement reflects a consistent pattern observed over years.

(ii) *Passive vs. aggressive underachievers*: Depending on their adjustment pattern, underachievers could also be classified as aggressive and passive.

(iii) *Severe and mild underachievers*: Coleman (1962) distinguishes between severe and mild underachievers, which indicates the difference of degree rather than of kind. Taking lead from Coleman, we may classify those as severe underachievers, who are in the top 5% or 10% of the sample in ability measure, but belong to the lowest quarter in achievement measure.[22] Severe underachievement may be both chronic as wellas situational. Chronic severe underachievement calls for anindepth study of each individual case, because the intensity of the problem may reflect some deep-rooted trouble in the psyche. Differing in degree, there are also cases of moderate to mild underachievement, which may again be situational as well as chronic. Moreover, underachievement is a cumulative process. It may start initially with mild underachievement with a student achieving just below the average achievement of the population studied. But over years, it may accumulate enough to push the student in the lowest quarter of the class in achievement. That is why, it is always better to take as criterion measure, performance spread in number of years. Gowan has pointed out that chronic underachievement represents a deep-rooted conflict of the psyche and unless detected early, it is difficult to be cured.[23]

(iv) *Achievement test and grade point average achievers*: Wellington and Wellington have found that achievement and grade point average select different samples as underachievers, indicating altogether two different types.[24]

Conclusion

On the basis of the preceding discussion, the following general conclusions can be drawn:

(a) Studies are more different than alike. They differ in the selection procedures for identifying the underachievers, in their variables and nature and number of sample studied. These differences make their comparison difficult, if not impossible.

(b) The findings are also extremely controversial, which may be attributed to the reason as stated above that they are more different than alike.

(c) Most of these studies have studied only one or two variables, which do not throw any light on the net work of variables, which are related to under and highachievement. For a fuller probe into the problem, a study of several important relevant variables selected both from the non-intellectual and study related factors is required. A thorough study of these forces, influencing the under and highachieving girls from rural areas was very much needed.

The above discussion indicates the need for a fresh intensive study of the academic underachievement among rural girls. The present study comes in response to this need.

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3

Identification of the Problem

The Context

The data for first phase were collected from a sample of 1225 rural girls students, drawn from 42 schools of Haryana. The rural secondary girls were preferred to urban and semi-urban girls and also over elementary and college-going rural girls because of the following reasons:

The studies carried so far have neglected the rural areas and particularly, the rural girls. The rural girls as compared to urban and even semi-urban ones are exposed to different and limited socio-economic and cultural environment. Most of the rural girls belong to the agricultural class, their parents are comparatively less literate and are also poor.

Because of their poor socio-economic and educational background, they are also deprived of the educationally and intellectually stimulating environment which is so helpful for the development of study and linguistic skills particularly. On the contrary, the urban and also semi-urban girls are exposed to this type of environment right from their childhood.

It was presumed that being a lady investigator, it would be easier to establish good rapport with the rural adolescent girls, who are observed to be more shy and submissive and also less sophisticated than the urban and semi-urban girls. Therefore, it would be easier to get natural and purposeful responses from them.

Rural girls coming from secondary schools were preferred to those coming from primary schools and colleges due to various reasons. First was the non-availability of the marks of the last six examinations of primary grades. Moreover, in Haryana, girls are promoted up to fourth standard without considering their attendance and examination results. Secondly, there are difficulties involved in administering the tests on them, as they are too young to understand the intricacies of the questions asked. The college girls were excluded, because the percentage of rural girls going to colleges is almost negligible. Moreover, the girls who join the college education from rural areas are usually those coming from urban residential schools. The rich and educated parents send their daughters to the residential schools of urban areas, so such girls do not really belong to the rural settings.

For the reasons mentioned above, it was thought appropriate to study the secondary rural girls exclusively and intensively. It was felt, that the addition of urban and semi-urban girls, at least for comparison purpose would have unnecessarily introduced heterogeneity in the criterion variable. Moreover, chances were that the urban girls scored higher on ability tests, in comparison to the rural ones. This would have possibly changed the status of the rural under and high achievers. It was, therefore, decided to take up a more homogeneous sample and to compare the under- and highachievers selected from that.

In order to study the factors related to underachievement, the data were collected in two phases of field work. The first phase was for identifying the two groups of under and high-achievers and the second was for studying the factors related to underachievement.

Procedure used for Selecting Underachievers

Reasonable expectation technique was used to identify the underachievers. The average of academic marks of last six consecutive examinations, from April 1977 to April 1979, constituted the criterion variable for this study. The score on verbal ability test formed the basis for predicting achievement. The cut-off points on ability and achievement continuum were decided on the basis of 'reasonable expectation' method, in which the cut-off point in criterion variable is always fixed below the mean of the population and the cut-off point on ability continuum is a matter of individual preference. In the present investigation, those who were selected as underachievers, were below the mean of the population in achievement measure, but in ability measure were on or above the 73rd percentile. The cut-off point on ability continuum was fixed at the 73rd percentile, instead of fixing it at the 75th percentile or still higher. This was done for the sake of selecting a larger sample, which as discussed helps to counteract many of the pitfalls related to this problem. Moreover, the cut-off point at the top 27 per cent in ability and below the mean on achievement also helped to minimize the regression effect.

Predictor variables used: The present investigation used both verbal and non-verbal tests of intelligence. The details of these tests are mentioned below:

(a) *Non-verbal test of intelligence*: Raven's (1960) Standard Progressive Matrices is a test of non-verbal intelligence.[1] It is used to test the capacity of a person to find out the relationship between meaningless figures, presented for his observation by following a systematic method of reasoning. Each figure has a missing part which has to be selected from the alternatives given below:

This test consists of 60 problems divided into five sets A, B, C, D and E. Each set has 12 problems and each set starts with a very simple, rather self-evident problem but the problems which follow become progressively more and more difficult. Each problem in this test is considered to be the 'mother' of a system of thought, for the solution of coming problems. Thus, this test is intended to assess the individual's capacity of forming comparisons and to reason by analogy, to find a missing part in order to complete a problem.

It can be administered both to an individual, as well as to the group. The total score on this test provides an index of abstract reasoning ability. One mark is given for each correct answer, making 60 the highest possible score. The total number of problems correctly answered form the score of an individual on this test.

The test-retest reliability of this test varies from .83 to .93 for different age groups (Raven, 1960).

(b) *Verbal Tests of Intelligence*: Mohsin's group test of verbal intelligence in Hindi, specially prepared for high school students, was used (Mohsin, undated)[2] in this study. The 156 items of the test are divided into six sub-groups, namely, separate time-limit, described as follows, has been prescribed for each part.

(a) Best answer (20 items)	5 minutes
(b) Analogy (30 items)	5 minutes
(c) Logical selection (40 items)	8 minutes
(d) Completion (22 items)	5 minutes
(e) Classification (26 items)	7 minutes
(f) Logical reasoning (18 items)	10 minutes
Total time limit	40 minutes

TABLE 3.1

Frequency distribution of Verbal ability scores of the total sample

Class Intervals	*Frequencies*
15-19	5
20-24	6
25-29	8
30-34	5
35-39	22
40-44	22
45-49	30
50-54	46
55-59	79
60-64	88
65-69	122
70-74	139
75-79	138
80-84	136
85-89	142
90-94	83
95-99	63
100-104	40
105-109	24

Class Intervals	*Frequencies*
110-114	14
115-119	9
120-124	2
125-129	1
130-134	—
135-139	1
	1,225

One mark is given for each correct answer and the total number of correct answers by a student represents his/her individual score. The maximum possible score is 156. The odd even reliability (corrected) of this test is .99 and the test-retest reliability (corrected) is .94. The validity coefficients have been found to be .56 with examination marks, .65 with Raven's Progressive Matrices, .63 with Terman's Arithmetical Reasoning Test and .54 with Menzel's General Intelligence Test.

Criterion variable used: Examination marks as criterion measure were preferred to achievement test scores, despite its various shortcomings mentioned earlier. It was presumed that the average of six examinations' marks gave a more reliable index of the actual achievement of the students than the achievement test scores which measured performance at a particular stage, and where the chance factors might influence the performance of the students.

Out of six examinations' performance which formed the criterion measure, one was a public examination, conducted by Board of School Education at the end of class VIII. The other five were conducted by the respective schools. But these five examinations were not of routine type of class tests. They were half-yearly and annual examinations, conducted each year by a school. They are taken seriously both by the students and teachers since the performance in these examinations formed the basis for the promotion of the students to the next class. The half-yearly examinations generally provide the feedback to the students, and the annual examination forms the basis for promotion to the next class. However, in certain cases, the performance in the half-yearly examination may become the basis for promotion. In one academic session, different schools observe different schedules for examinations. Some have monthly class tests, while some have quarterly, i.e. four examinations in one session, however, each school holds two examinations, one at the end of six months, known as half-yearly and the other at the end of the year, known as final examination. Marks of the six previous examinations collected for Xth grade students were two each for IXth, VIIIth and VIIth classes, and for IXth grade students, again they were two each for VIIIth, VIIth and VIth classes. Only marks in the academic subjects were considered and those in the non-academic subjects like music, tailoring, physical education, gardening and other like subjects are excluded. This was done because neither the students nor the teachers attach much importance to performance in these areas. Moreover, their inclusion would have introduced unnecessary heterogeneity in the criterion measure, since different schools provide different non-academic subjects. However, in the academic subjects, the syllabus and the test criterion followed are more or less the same.

Marks secured by each student in the academic subjects of each examination were added together and for each one of them an average was found out, which formed the index of her achievement. This gave the overall measure of actual achievement for each member of the sample.

TABLE 3.2

Frequency distribution of the Achievement scores

Class Intervals	*Frequencies*
15-19	7
20-24	38
25-29	119
30-34	209
35-39	263
40-44	248
45-49	158
50-54	85
55-59	56
60-64	23
65-69	14
70-74	5
	1,225

The tests were administered in batches of about 15. The sitting arrangement was made in such a way that they could not copy from each other. The tests were administered and scored according to the instructions mentioned in the manuals of the tests.

Analysis: The product moment coefficient of correlations were calculated between the verbal and non-verbal test scores, achievement and verbal scores, achievement and non-verbal scores and achievement and total intelligence test scores, i.e. scores on verbal and non-verbal tests combined together. These were done for reasons, mentioned below.

(i) The first purpose was to find out the relationship between verbal and non-verbal abilities, which would show that the two tests measured the same area of behaviour. If the correlation between the two would be moderate, it would validate them against each other.

(ii) The second was to find out the relationship between the intelligence tests and achievement for deciding the basis for combining the two intelligence tests together for predicting the expected level of achievement for the present sample. Adequate basis would have been provided by the existence of a high positive correlation between the intelligence tests and the achievement measure on the one hand, and the existence of a not very high positive correlation between the two intelligence tests on the other.

For these purposes, three samples of 200 each were drawn at random from the total sample for finding out each set of correlation mentioned below. Each was converted into Fisher's 'Z' score for finding out the average 'r'. The following tables show the results.

TABLE 3.3

Correlation between verbal and non-verbal intelligence test scores

	N	*'r'*	*Fisher's 'Z'*
First group	200	.18	.18
Second group	200	.39	.41
Third group	200	.67	.81
		1.24	1.40

MZ = .47
Mr = .44

(a) *Comment*: The above table indicates that two intelligence tests do not show a very high positive correlation. Yet the relationship between them is positive and is adequately high to show that they are valid and therefore, tending towards measuring the intelligence.

TABLE 3.4

Correlation between achievement and verbal intelligence test scores

	N	'*r*'	*Fisher's 'Z'*
First group	200	.30	.31
Second group	200	.27	.28
Third group	200	.26	.27
		.83	.86

MZ = .29
Mr = .28

TABLE 3.5

Correlation between achievement and non-verbal intelligence test scores

	N	'*r*'	*Fisher's 'Z'*
First group	200	.18	.18
Second group	200	.10	.10
Third group	200	.06	.06
		.34	.34

MZ = .12
Mr = .12

TABLE 3.6

Correlation between achievement and total scores of both the verbal and non-verbal intelligence tests

	N	'*r*'	*Fisher's 'Z'*
First group	200	.12	.12
Second group	200	.22	.22
Third group	200	.16	.16
		.50	.50

MZ = .17
Mr = .17

(b) *Comment*: A perusal of the above tables would show that for the following reasons, the correlations do not provide us with adequate basis for combining together the verbal and non-verbal tests of intelligence for predicting the expected achievement of the present sample.

(i) The first and foremost reason is that the combination of both the tests decreases the value of correlation with achievement to .17, (cf table 3.6) from the value of .28 (cf table 3.4), which has been found for the relationship existing between achievement and only verbal intelligence test. Therefore, the addition of non-verbal test to the battery will not be helpful in any way.

(ii) Secondly, a low positive correlation exists between non-verbal intelligence tests and achievement (cf table 3.5). This is possibly because, as discussed earlier, girls perform better on verbal tests of intelligence than on non-verbal tests of intelligence. The rural population particularly excels on verbal than on non-verbal tests of intelligence and the present sample consists of rural girls only.

On the basis of the reason mentioned above, it was decided to select the under and highachievers only on the basis of their verbal intelligence test scores. The non-verbal test of intelligence was used because some of the studies have reported that the highachievers scored better on verbal tests and the underachievers on non-verbal tests of intelligence. Thus, the exclusion of non-verbal tests of intelligence would not have cleared the suspicion of bias towards the prospective underachievers.

Operational definitions

(a) *Underachievers*: Those who were at and above 73rd percentile in intelligence and below the sample mean in achievement were defined as underachievers. Therefore, all those girls who scored at and above 89.00 on verbal ability test, but below 39.00 in the achievement were identified as underachievers. Out of this population, 100 pupils were selected at random for study.

(b) *Highachievers*: Those students who were at and above 73rd percentile, both in ability and achievement were selected as highachievers. Thus, all those with verbal ability score at and above 89.00 and with the achievement score at and above 45.00, were selected as highachievers. Out a selected sample, 100 were randomly selected as highachievers.

Comparison

Comparison of the verbal ability of the selected under and highachievers is shown in the table given below:

TABLE 3.7

Means, SD, SE, obtained difference, CR and significance levels for difference between under and highachievers on the verbal intelligence test

	Group	*Mean*	*SD*	*SE*	*Obtained difference (1 and 2)*	*'t'*	*Significance level*
1.	UA	92.70	7.05	0.70	2.80	2.15	0.05
2.	HA	95.50	10.91	1.09			

Comment: The significant difference existing between the high and underachievers (Table 3.7) was not expected. The difference could have been made insignificant by dropping some high scores from the highachiever group. However, this was not done deliberately, as it would have made the sample size for the two groups unequal, which in turn would have introduced some complications in statistical analysis. Moreover, the difference between the two groups was also not very high and was significant only at 0.05 level.

(d) Comparison of achievement levels of under and high-achievers.

The table mentioned below shows the difference between the two selected groups on achievement measure:

TABLE 3.8

Means, SD, SE, obtained difference, CR and significance levels for difference between under and highachievers on achievement levels

	Group	*Mean*	*SD*	*SE*	*Obtained difference (UA & HA)*	*'t'*	*Significance level*
1.	UA	32.40	5.75	0.57	19.28	21.91	0.01
2.	HA	51.68	6.62	0.66			

Comment: Table 3.8 indicates that the under and high-achievers differ in their achievement highly significantly ($p < .01$), which was as expected. Thus on the basis of Tables 3.7 and 3.8 we can conclude that the under and highachievers do not differ much in their ability levels, but they do differ very significantly in their achievement levels.

The under and highachievers were given various tests to find out the factors related to under and highachievement, which would be discussed in the next chapter.

REFERENCES

1. Raven, J.C. *Guide to the Standard Progressive Matrices, Sets A, B, C, D and E.* London, Lewis, 1960.
2. Mohsin, S.M. (Undated). "The verbal test of general intelligence." *Manual of instructions, Educ. and Vol. Guid. Bur.*, Bihar, Patna.

4

Tests and Procedure

The main investigation consisted of two groups: under and highachievers. Each group contained 100 students. The following tests, described below were administered on them:

Linguistic Ability Tests

Language is a whole, in which sound and meaning interact and has two media for communication, spoken and written. Both the media play important roles in transferring knowledge. In the written medium sounds are represented by visual symbols in a system, which govern the spelling rule and this is associated with reading, as whatever is to be written is usually meant to be read. This is crucial for higher education, as through this, they read the books and write the examination. The same way listening and speaking skills are associated, as whatever is spoken is meant to be listened to and there cannot be any response without the listening comprehension. This way all the linguistic skills are inter-related and interdependent. In order to study the linguistic ability as a variable three tests, viz. Reading speed and Comprehension, Vocabulary and Spelling tests were given. These tests are described below:

(i) *Reading speed and Comprehension Test*: This test was originally prepared by Greene and was developed in Hindi by Srivastava.[1] The test measures the reading speed and comprehension of both the school and college students. It consists of 75 statements and five illustrations given in the beginning of the test. In each statement, there is one word which spoils the sense of the whole statement. The students are required to simply cross out such words which appear to be absurd in each statement. For this, the subjects have to understand the whole statement and have also to be quick in finding out the word which spoils the sense of the whole statement, as only seven minutes are allowed to complete the test. The statements, however, are so easy that there is no difficulty in understanding them. The emphasis in this test is on speed and comprehension of the language. One credit is given for each correct answer.

The test-retest reliability was found to be .86 and the split half (odd even) to be .94. By using Spearman Brown formula it rose to .97. The test was validated against examination marks and the correlation was .51. This test correlated .69 with Mohsin's Verbal Intelligence Test and after parcelling out the effect of intelligence, correlation of reading speed and comprehension with achievement dropped to .455.

(ii) *Vocabulary test*: The test, originally prepared by Educational and Vocational Guidance Bureau, Bihar, was standardised by Sharan for the high school students.[2] The original inventory had in all 135 items. Out of these 65 were multiple choice items, 45 free response items and 25 substitution items. Item analysis yielded 57 items. Reliability coefficient was found to be .91. Validated against examination marks in Hindi, English, Social Studies, Physics and Chemistry, History and Geography and total marks, the correlation coefficients were reported to be .71, .59, .23, .44, .29 and .50 respectively. Except with History and Geography all the correlation coefficients were highly significant.

The standardised form of this test was used in this study. It contains 35 multiple choice items with four alternatives to each word, 15 free choice items and only 6 substitution items. One mark was given for each correct answer and the maximum possible score was 56.

(iii) *Spelling test*: This test was prepared by Mohsin in Hindi.[3] Out of 100 words given in this test, the spellings of 40 are written incorrectly, and those of remaining 60, written correctly. Both the correct and incorrect spellings are mixed at random in the test. The student has to find out the incorrect spellings and has to write against each its correct spelling. One credit is given for each correctly written spelling. Thus, the total score is 40.

Study Habit inventory

Hindi adaptation of Wrenn's study habit inventory, was prepared by Mohsin.[4]

The original inventory contains 28 specific statements regarding study habits and attitudes towards studies. The Hindi adaptation of this inventory contains only 27 statements and for each statement, there are three possible answers such as rarely, sometimes and always. For each answer, there is separate score. The positive score denotes that the response given is more in the direction of good planning of study work and negative score indicates poor planning of study work. The high positive score denotes the good study habits of the student.

Academic Achievement Motivation Tests

The following tests were used for measuring this variable:

(i) *Academic movitation inventory*: This inventory was prepared by Singh, on the basis of the test used by Brookover, Paterson and Thomas (1962).[5]

It has two parts viz. self concept of ability and importance attached to achievement. The former part has eight multiple choice questions which measure the student's self-concept of academic ability in relation to his classmates. The latter has also eight multiple choice questions measuring the importance attached by the students to achieving good grades.

The reliability of the original scale, which was used by Brookover, Paterson and Thomas was .82 for males and .77 for females. It correlated .57 with grade point average. Singh found the test-retest reliability of the self-concept of ability to be .85, and of the second part, i.e. importance attached to to grades to be .88.

This inventory was used for this investigation also to measure (i) the self-concept of academic ability of the rural girls and (ii) the importance attached to achievement by them.

There are 16 total statements and for each statement there are five responses. The student has to put the right mark against one of these responses. For each statement, the first response carries the highest mark, i.e. five, and the fifth and the last response, the lowest mark i.e. one. The total marks for the first part as well as for the second part of this inventory are the same, i.e. 40 marks for each. Thus the total marks for this inventory are 80. The high score denotes high self-concept of academic ability and higher importance attached to the grades by the students.

(ii) *Achievement motivation test*: Bhatia's achievement motivation test in Hindi was used for this investigation which measures the achievement motivation of the students.[6]

This test comprises 32 items. In order to indicate their response, the subjects have to encircle either 'Yes' or 'No', in response to each item. One mark is given for 'Yes' response and zero for 'No' response. The total score which an individual can obtain ranges from 0 to 32. The high scores on the scale are indicative of high level of achievement motivation of the students.

Singh (1978) has reported the test-retest reliabilities of this test to be .87.[7] This test estimates the achievement motivation level of the students in different situations related to their lives.

(c) *Personality Related Tests*: The following tests and a checklist were used to measure the personality of the under and highachievers.

(i) *Maslow security-insecurity test*: This inventory was originally prepared by Maslow, which has 75 questions in all. These questions have to be answered in terms of 'Yes' or 'No' or '?'. The present investigation used the Hindi adaptation of this test prepared by Singh.[8] He found the odd-even and test-retest reliabilities of this test to be .90 and .88 respectively.

High score on this scale on the whole indicates the presence of the feelings of emotional insecurity, rejection, isolation and other such feelings.

(ii) *Bell's adjustment inventory*: Hindi adaptation of standardized Bell's adjustment inventory was prepared by Mohsin and Shamshad.[9] This inventory measures the adjustment of the students in home, health, social and emotional areas. The student form of this inventory was used in this investigation also. This inventory has 135 items. These items are to be answered in terms of 'Yes' or 'No' or '?'. There are 35 questions in home area, which measures home life and facilities. Questions (31) in health area measure the health conditions in terms of illness etc. There are 34 items of social adjustment area, which measure the students' adjustment in terms of introversion, shyness and submissiveness. There are 35 questions in the emotional area, which measure the emotional instability and nervousness of the students. All these questions have been mixed at random in this inventory. The high score in all the areas reveals unsatisfactory adjustment.

The odd-even reliability of this revised Hindi version have been reported as 0.80 for home, 0.82 for health, 0.73 for social, 0.85 for emotional and 0.93 for total score and the test-retest reliability was 0.70 for home, 0.80 for health, 0.86 for social, 0.91 for emotional and 0.92 for the total score.

This test was used to see the difference between the adjustment patterns of under and highachievers and to find how much each area of adjustment is contributing towards under and high achievement.

(iii) *Checklist*: The checklist prepared by Srivastava measures the nature and extent of problems experienced by the students in the four areas of life namely family, school, economic and recreation.[10]

This checklist contains 128 problems in all, with 47, 45, 17 and 19 problems in the areas of family, school, economic condition and recreation respectively. The students were asked to mark those problems which were either worrying them at present or in their past. The number of problems marked by each student formed his score for the checklist.

All the above-mentioned tests were administered and scored as per the instructions given in the test manuals.

Factor Analysis

Factor analysis was used to find the amount of contribution of each variable towards under and highachievement. Centroid method was preferred to the other methods of Factor analysis like Principal Components by Hotelling, Principal Axes by Kelley and Summation Analysis by Burt; because it has specially provided rotation methods, which are necessary for arriving at meaningful factors.[11,12,13] The methods of Hotelling and Kelley are undoubtedly rigorous mathematically and can be applied objectively. Without modifications, however, they frequently lead to factors by which one can account for obtained scores and intercorrelations, but which are difficult to interpret psychologically. The results also lack invariance in the sense that they depend upon what particular tests have been analysed together.

For the above reasons, Thurstone's method of factor analysis was used which involves the following three steps. The same were followed systematically.[14]

(i) *Extracting the centroid factors*: The factors were extracted after the preparation of correlation matrices of sixteen variables for under and highachievers respectively (cf Tables 4.1 and 4.2). The centroid factors were extracted and the factor loadings obtained for under and highachievers are given in Tables 4.3 and 4.4.

(ii) *Rotation of the centroid factor*: The oblique method was used to rotate the factors because the variables were of interrelated nature as some of the environmental factors were studied to find their influence on achievement patterns. To attain oblique solution for meaningful explanation, the single plane method was preferred to other graphical methods, like radial, extended vectors and primary axes. These methods do not represent any reference axes with which one can interpret the rotated factors more scientifically. The variables were selected for rotation, which were expected to be a pure well-saturated measure of factor.

(iii) *Interpretation of factors*: For interpretation of the factors, only positive significant loadings of the variables sharing the common element among themselves were considered for identification of the factors. And those variables which were not sharing any similarity in their content and nature with the identified factor were not considered for naming the factors. Significance levels of each factor was calculated by employing Burt's formula which was modified by Cureton.[15'16]

$$c = k \quad n/N(n - s + 1) \qquad \ldots (1)$$

$$a^1 = \frac{-1 + /1 + 4c^2}{2c} \qquad \ldots (2)$$

This criterion was preferred to the criterion of selecting the highest loadings interim of percentage, to which a particular size of the loading contributes to the average variance of the variables, because of the following two reasons:

(a) This criterion was based on empirical ground than the a priori grounds.

TABLE 4.1

Inter-correlation Matrix—

Variables	*1*	*2*	*3*	*4*	*5*	*6*	*7*
1. Spelling		0.23	—0.03	—0.01	0.03	0.05	0.01
2. Vocabulary	0.23		0.10	—0.08	−0.14	0.25	—0.02
3. Reading	—0.03	0.10		—0.08	−0.12	−0.07	−0.16
4. Bhatia Ach. M.	—0.01	—0.08	—0.08		0.14	0.11	0.29
5. Self-concept of ability—A.M.	0.03	0.14	—0.12	0.14		0.54	0.15
6. Importance attached to achievement —M.A.	0.05	0.25	−0.07	0.11	0.54		0.13
7. Maslow—Insecurity, Security	0.01	—0.02	—0.16	0.29	0.15	0.13	
8. Bell's—Home	0.01	—0.08	—0.10	—0.05	0.02	—0.04	0.27
9. Bell's—Health	0.04	—0.05	0.01	0.13	−0.07	0.10	0.33
10. Bell's—Social	0.16	—0.15	0.04	—0.02	—0.14	0.09	0.18
11. Bell's—Emotional	0.07	—0.27	0.08	0.12	0.13	0.16	0.41
12. Study habit	0.14	0.07	0.15	0.17	—0.01	0.20	0.01
13. Checklist—Family	0.00	—0.03	—0.13	0.20	—0.07	0.03	0.24
14. Checklist—School	0.13	—0.07	—0.14	0.15	0.05	—0.11	0.29
15. Checklist—Economic	0.13	—0.01	—0.06	0.25	0.14	0.03	0.22
16. Checklist—Recreational	0.13	—0.05	—0.12	0.09	—0.13	—0.07	0.21

Underachievers

8	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*
0.01	0.04	0.16	0.07	0.14	0.00	0.13	0.13	0.13
—0.08	—0.05	—0.15	—0.27	0.07	—0.03	—0.07	—0.01	—0.05
—0.10	—0.01	0.04	0.08	0.15	—0.13	—0.14	—0.06	—0.12
—0.06	0.13	—0.02	0.12	0.17	0.02	0.15	0.25	0.09
0.02	—0.07	—0.14	0.13	—0.01	—0.07	0.05	0.14	—0.13
—0.04	0.10	0.09	0.16	0.20	0.03	—0.11	0.03	—0.07
0.27	0.33	0.18	0.41	0.01	0.24	0.29	0.22	0.21
	0.39	0.41	0.35	—0.12	0.22	0.24	0.16	0.15
0.39		0.43	0.55	—0.10	0.35	0.33	0.38	0.22
0.41	0.43		0.63	—0.05	0.17	0.10	0.19	0.17
0.35	0.55	0.63		—0.10	0.16	0.24	0.17	0.18
—0.12	—0.10	—0.05	—0.10		—0.05	—0.06	—0.02	0.16
0.22	0.35	0.17	0.18	—0.05		0.14	0.55	0.58
0.24	0.35	0.18	0.24	—0.06	0.74		0.66	0.75
0.16	0.38	0.19	0.17	—0.02	0.55	0.66		0.51
0.15	0.22	0.13	0.18	0.16	0.58	0.75	0.51	

TABLE 4.2

Inter-correlation Matrix—

Variables	*1*	*2*	*3*	*4*	*5*	*6*	*7*
1. Spelling		0.50	0.30	—0.10	0.04	—0.08	0.04
2. Vocabulary	0.50		0.24	—0.08	0.33	0.09	0.00
3. Reading Speed and Comprehension	0.30	0.24		—0.14	0.11	—0.10	—0.19
4. Bhatia Ach. N.	—0.10	—0.06	0.14		0.23	0.19	0.24
5. Self-concept of ability —A.N.	0.04	0.33	0.11	0.23		0.33	0.42
6. Importance attached to achievement —A.N.	—0.08	0.09	—0.10	0.19	0.33		0.13
7. Maslow—Insecurity, Security	0.04	0.00	—0.16	0.24	0.42	0.13	
8. Bell's—Home	—0.03	—0.14	—0.18	—0.09	—0.04	0.03	0.03
9. Bell's—Health	0.05	—0.04	—0.13	0.06	—0.03	0.02	0.11
10. Bell's—Social	—0.09	—0.25	—0.30	—0.22	—0.22	—0.16	0.03
11. Bell's—Emotional	0.06	—0.10	—0.16	—0.02	—0.05	0.19	0.22
12. Study habit	—0.02	0.05	0.26	0.09	0.15	0.02	—0.33
13. Checklist—Family	—0.10	0.01	—0.04	—0.10	—0.23	—0.05	0.00
14. Checklist—School	0.13	0.11	0.02	—0.12	—0.05	0.06	—0.10
15. Checklist—Economic	—0.16	—0.16	—0.10	—0.09	—0.01	—0.03	—0.08
16. Checklist—Recreational	0.11	0.05	0.02	—0.10	—0.02	—0.03	—0.03

Highachievers

8	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*
—0.03	0.05	—0.09	0.06	—0.02	—0.10	0.13	—0.16	0.11
—0.14	—0.04	—0.25	—0.10	0.05	0.01	0.11	—0.16	0.05
—0.18	—0.13	—0.30	—0.16	0.26	—0.04	0.02	—0.10	0.02
—0.09	0.06	—0.22	—0.02	0.09	—0.10	—0.12	—0.09	—0.10
—0.04	—0.03	—0.22	—0.05	0.15	—0.23	—0.05	—0.01	—0.02
0.03	0.02	—0.16	0.19	0.02	—0.05	0.06	—0.03	—0.03
0.03	0.11	0.03	0.22	—0.33	0.00	—0.10	—0.08	—0.03
	0.63	0.36	0.59	—0.18	0.22	0.11	0.13	0.06
0.63		0.43	0.64	—0.22	0.23	0.19	0.17	0.06
0.36	0.40		0.61	—0.18	0.07	0.12	0.09	0.12
0.59	0.64	0.61		—0.27	0.16	0.31	0.18	0.13
—0.18	—0.22	—0.18	—0.27		—0.11	—0.01	0.03	0.04
0.22	0.23	0.07	0.16	—0.11		0.60	0.53	0.54
0.11	0.19	0.12	0.31	—0.01	0.60		0.44	0.50
0.13	0.17	0.09	0.18	0.03	0.53	0.44		0.58
0.06	0.06	0.12	0.13	0.04	0.54	0.50	0.58	

TABLE 4.3
Rotated Factor Loading on the Oblique Simple Axes (V)—Underachievers

Variables	*Factor-I*	*Factor-II*	*Factor-III*	*Factor-IV*	*Factor-V*	h^2
1. Spelling	—.12	.09	.37	—.12	—.11	.19
2. Vocabulary	.16	.26	.13	—.07	—.17	.14
3. Reading Speed and Comprehension	—.30	.43	—.02	—.13	—.36	.42
4. Bhatia Ach. Motivation	.25	—.37	.31	—.07	—.34	.42
5. Self-concept of ability—Academic Motivation	.64	—.13	.06	—.14	.37	.59
6. Importance attached to Achievement—A.N.	.43	.06	.18	—.29	.23	.36
7. Maslow—Insecurity, Security	.25	—.48	.14	.05	.48	.35
8. Bell's Home	—.04	—.16	—.23	.21	.17	.15
9. Bell's Health	—.11	—.09	—.11	.25	.07	.10
10. Bell's Social	—.34	.04	—.03	—.03	.05	.12
11. Bell's Emotional	—.15	—.19	—.08	—.10	.38	.22
12. Study habit	—.04	.04	.42	—.26	—.02	.25
13. Checklist—Family	—.05	—.33	.06	.66	—.05	.55
14. Checklist—School	—.05	—.46	.12	.76	—.02	.81
15. Checklist—Economic	.03	—.30	.22	.49	.00	.38
16. Checklist—Recreational	—.26	—.30	.33	.48	—.12	.51

TABLE 4.4
Rotated Factor loadings on the Oblique Simple Axes (V)—Highachievers

Variables	Factor-I	Factor-II	Factor-III	Factor-IV	Factor-V	Factor-IV	h^2
1. Spelling	—.22	.69	—.10	—.05	—.18	—.07	.57
2. Vocabulary	—.04	.71	.04	—.05	—.02	—.22	.56
3. Reading Speed and Comprehension	.12	.42	.27	—.09	.00	—.37	.41
4. Bhatia Ach. Motivation	.56	—.11	.05	.01	.41	—.39	.65
5. Self-Concept of ability—Academic motivation	.56	.21	.16	—.21	.35	—.43	.73
6. Importance attached to achievement—A.N.	.38	—.03	.09	—.21	.13	—.26	.28
7. Maslow—Insecurity, Security	.32	—.06	—.43	.15	.47	—.01	.53
8. Bell's Home	.05	—.18	—.45	—.13	—.32	—.10	.37
9. Bell's Health	.09	—.08	—.52	—.08	—.25	—.16	.38
10. Bell's Social	—.40	—.24	—.38	—.16	—.47	.44	.80
11. Bell's Emotional	—.01	—.05	—.52	—.23	—.37	—.02	.46
12. Study habit	.10	.11	.55	—.33	—.15	—.27	.53
13. Checklist—Family	—.13	—.03	—.23	.54	.00	—.10	.39
14. Checklist--School	—.19	.21	—.04	.14	—.25	—.19	.20
15. Checklist—Economic	—.03	—.16	.13	.11	—.19	—.25	.15
16. Checklist—Recreational	—.18	.14	.08	.17	—.19	=.18	.16

(b) Difficulty in deciding how much higher a loading should be significant according to the size of sample, e.g. 0.40 is significant for small sample and also for a large sample. In this way, there is a fear to miss some of the significant factors.

The usual trend of factor interpretation is in pairs, e.g. verbal *vs* non-verbal. But in the present investigation, it was not possible to interpret the identified factors in pairs, i.e. academic *vs* non-intellectual, due to the following reasons:

(i) The variables studied were so much inter-related that it was difficult to interpret them into pairs.
(ii) The under and highachievers were studied separately. The positive significant loadings in Table 4.4 for high-achievement indicate the contribution of each variable in positive direction. The positive significant loadings in Table 4.3 indicate the contribution of each variable in negative direction, i.e. underachievement. Thus, the contribution of the academic and non-intellectual factors here represent positive negative values.

On the basis of above criteria and precautions, five factors were obtained for underachievers and six factors for highachievers. Some of the factors were showing leadings on specific tests. Therefore, these factors were tentatively named after their specific nature of the content.

The 't' test was employed to find out the significance of the inter-group difference on the variables studied. The statistic 't' test stands on a number of assumptions, which have to be satisfied before it is used. One assumption is that of homogeneity of variance to which a test is applied for justifying the assumption. However, no test of homogeneity of variance was applied in the present case, because the sample studied is very large and the sample size of both the groups is equal. Moreover, the sample was also homogeneous with regard to their sex, educational levels, socio-economic and cultural backgrounds.

Thus the 't' test was used to find out the difference between under and highachievers. Results of 't' test were also compared with the results of centroid method of factor analysis, which tells the contribution of each variable towards under and high-achievement separately.

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5

Factors Related to Under and Highachievement

In this Chapter, we will interpret the factor loadings obtained through oblique rotation of the centroid method. The loading on each variable is indicator of the amount responsible for the differential pattern of achievement. High loading on the variable for underachievers indicates that the variable is highly responsible for underachievement. The following factors are responsible for the talent loss i.e. the underachievement among this disadvantaged group.

TABLE 5.1
Factor I—Poor Academic Achievement Motivation

Variables	*Factor Loadings*
(1) Self-concept of ability	.64
(2) Importance attached to achievement	.43
(3) Achievement motivation	.25
(4) Feelings of insecurity	.25
(5) Social adjustment	— .34
(6) Reading speed and comprehension	— .30
(7) Recreational problems	— .26

Factor I has high significant loadings on two variables namely, self-concept of ability (.64) and importance attached to achievement (.43) and a moderate loading on achievement motivation (.25). This indicates that the very poor self-image of the underachievers regarding their abilities, less importance they attach to their achievement grades and their poor achievement motivation are significant contribution to their poor achievements. The common element involved in these variables is 'poor academic achievement motivation'.

The variables with low as well as negative loadings reveal that social maladjustment, poor reading speed and comprehension and recreational problems do not share any common feature of academic achievement motivation. This is because these variables measure social maladjustment, recreational problems and linguistic skills. The academic achievement motivation measures underachievers' level of aspiration and their self-image about their abilities etc. However, the only positive loading on feeling of insecurity (.25), indicates that feeling of insecurity is positively related to poor academic achievement motivation, whereas other variables, like social adjustment, reading speed and comprehension and recreational problems have negative relationships with academic achievement motivation.

It appears that the poor academic achievement motivation is highly contributing towards underachievement and the underachievers tend to have poor self-concept of ability, attach less importance to grades and have overall poor achievement motivation.

TABLE 5.2

Factor II—Poor Linguistic Ability

Variables	*Factor Loadings*
(1) Reading speed and comprehension	.43
(2) Vocabulary	.26
(3) Feelings of insecurity	— .48
(4) School problems	— .46
(5) Achievement motivation	— .37
(6) Family problems	— .33
(7) Economic problems	— .30
(8) Recreational problems	— .30

Factor II has positive significant loadings only on two variables, namely, reading speed and comprehension (.43) and vocabulary (.26). Out of these two, the poor reading speed and comprehension is more contributing to underachievement, than the limited store of vocabulary of the underachievers. The common feature involved in these variables is the linguistic ability.

The negative significant loadings on the other variables, namely, feelings of insecurity, school problems, achievement motivation, familial problems, economic problems and recreational problems indicate that these variables are dealing with adjustment problems and their content is different from the linguistic ability.

From the above description, it appears that the underachievers tend to possess poor linguistic ability which is significantly contributing towards their underachievement.

TABLE 5.3

Factor III—Poor Planning of Study Work.

Variables	*Factor Loadings*
(1) Study habits	.42
(2) Spelling	.37
(3) Recreational problems	.33
(4) Achievement motivation	.31
(5) Economic problems	.22
(6) Home adjustment	—.23

Factor III has variables, namely, study habits (.42) and spelling (.37), highly loaded on it which determines that the underachievers as a group tend to possess poor study habits and poor knowledge of spellings. The common element involved in these variables is the planning of study work, which is significantly contributing towards underachievement.

The significant loadings on variables like recreational problems (.33), poor achievement motivation (.31) and economic problems (.22) indicate that these variables are positively related with poor planning of their study work. The underachievers have poor achievement motivation and less interest for their study work, which develop poor study habits and poor arrangement of their study work. They also face some financial problems, as the loading on economic problem is positive and significant. But home adjustment is negatively related to the poor planning of study work. This points out that these variables are related to non-intellectual area, whereas study habits and spellings are directly related to academic area and significantly contribute more than other variables.

From the above descriptions, we can conclude that the factor poor planning of studywork is significantly contributing towards underachievement.

TABLE 5.4

Factor IV—Poor Adjustment

Variables	*Factor Loadings*
(1) School problems	.76
(2) Family problems	.66
(3) Economic problems	.49
(4) Recreational problems	.48
(5) Poor health (Bell's)	.25
(6) Home adjustment	.21
(7) Less importance attached to achievement	—.29
(8) Poor study habits	—.26

This factor is represented most clearly by very high significant loadings on variables from 1 to 6, which indicate that it is highly loaded with the large number of adjustment problems, faced by underachievers in the area of school, family, economic, recreational, health and home. The common feature shared by these variables is poor adjustment, which is significantly contributing towards underachievement. Therefore, this factor is named as "poor adjustment". The negative significant loadings on variables, importance attached to achievement (.29) and study habit (.26) indicate that these factors are related to the academic areas and the factor of poor adjustment to the non-intellectual area.

TABLE 5.5

Factor V—Emotional Insecurity

Variables	*Factor Loadings*
(1) Feeling of insecurity	.48
(2) Emotional maladjustment	.38
(3) Self-concept of ability	.37
(4) Achievement motivation	.34
(5) Less importance attached to achievement	.23
(6) Poor reading speed and comprehension	—.36

Factor V is highly loaded with feeling of insecurity (.48) and emotional maladjustment (.38). This indicates the emotional insecurity of the subjects, which is significantly contributing towards underachievement.

The significant loadings on variables, like poor self-concept of ability (.37), poor achievement motivation (.34) and less importance attached to achievement (.23) indicate that these variables are measuring the academic achievement motivation and this factor has higher loadings on feelings of insecurity and on emotional nervousness, which depict the quality of personality trait. Thus, the emotional insecurity factor is not sharing any element of academic achievement motivation. But, the emotional insecurity is positively related with poor academic achievement motivation variables. The negative significant loading on poor reading speed and comprehension (.36) shows that poor reading speed and comprehension has negative relationship with emotional insecurity. Thus, we can tentatively identify this factor as 'emotional insecurity'.

FACTORS RELATED TO HIGHACHIEVEMENT

TABLE 5.6

Factor I—Academic Achievement Motivation

Variables	*Factor Loadings*
(1) Achievement motivation	.56
(2) Self-concept of ability	.56
(3) Importance attached to achievement	.38
(4) Feeling of security	.32
(5) Social adjustment	—.40
(6) Spelling	—.22
(7) School problems	—.19

Factor I has very significant loadings on three variables, viz. achievement motivation (.56), self-concept of ability (.56) and importance attached to achievement (.38), which indicate that the highachievers have high achievement motivation, high self-concept of their ability to do well academically, and also attach more importance to achieving high grades. The common element involved in these variables is academic achievement motivation, which is significantly contributing towards highachievement.

The other variables, namely feeling of security, social maladjustment, poor spelling and school problems do not share any commonness with this factor, as these variables are related with security and also with adjustment problems. But the significant positive loading on feeling of security is positively related with academic achievement motivation. Negative loadings on social maladjustment, poor spelling and school problem indicate negative relationship with academic achievement motivation.

From the above description, we can say that the factor I is highly loaded with academic achievement motivation variables, which is significantly contributing towards highachievement.

TABLE 5.7

Factor II—Linguistic Ability

Variables	*Factor Loadings*
(1) Vocabulary	.71
(2) Spelling	.69
(3) Reading speed and comprehension	.42
(4) Self-concept of ability	.21
(5) School problems	.21
(6) Social adjustment	—.24

A glance of the above table will bring out the fact that the common element involved in all these variables namely, vocabulary (.71); spelling (.69) and reading speed and comprehension (.42), is 'linguistic ability' which is contributing very highly towards highachievement.

The lower significant loadings on self-concept of ability (.21), school problems (.21) and the negative loading on social adjustment (—.24), indicate that these variables do not involve any linguistic ablity. But the self-concept of ability and school adjustment are positively related to linguistic ability. And the negative loading on social adjustment indicates negative relationship between good linguistic ability and poor social adjustment.

Factor III has positive high loadings on only two variables, viz. study habit (.55), reading speed and comprehension (.27). This factor is related to the good planning of study work.

TABLE 5.8

Factor III—Planning of Study Work

Variables	*Factor Loadings*
(1) Study habits	.55
(2) Reading speed and comprehension	.27
(3) Health adjustment	—.52
(4) Emotional adjustment	—.52
(5) Home adjustment	—.45
(6) Feeling of insecurity	—.43
(7) Social adjustment	—.38
(8) Familial adjustment	—.23

The negative loading on the variables, familial emotional, home and social, health, adjustments, and feelings of security show that they do not share any feature of this factor 'planning of good study work', as they are dealing with the adjustment problems faced by the students in different areas of life. But all these variables are negatively related to good planning of study work.

From the above description, it can be ascertained that the highachievers tend to have a good planning of study work, which is significantly contributing towards their high-achievement.

TABLE 5.9

Factor IV—Familial Adjustment

Variables	*Factor Loadings*
(1) Familial adjustment	.54
(2) Study habits	—.33
(3) Emotional adjustment	—.23
(4) Self-concept of ability	—.21
(5) Importance attached to achievement	—.21

The factor IV has only positive significant loading on familial adjustment (.54), which indicates that the highachievers face less number of problems in family area, which is contributing significantly towards their highachievement.

The moderate negative loadings on study habits (−.33), emotional maladjustment (−.23), self-concept of ability (−.21) and importance attached to achievement (−.21) indicate that these variables are negatively related with familial adjustment. This shows that there is no common element involved in these variables of factor IV.

From the above description, it appears that good familial adjustment is significantly associated with highachievement. Therefore, we can tentatively name this factor as familial adjustment.

TABLE 5.10

Factor V—Feelings of Security

Variables	*Factor Loadings*
(1) Feeling of security	.47
(2) Achievement motivation	.41
(3) Self-concept of ability	.35
(4) Social adjustment	−.47
(5) Emotional adjustment	—.37
(6) Home adjustment	—.32
(7) Health adjustment	—.25

Factor V has positive loading on feeling of security (.47), which is indicative of its higher contribution to highachievement. Moreover, the positive loadings on achievement motivation (.41) and on self-concept of ability (.35) point out that the highachievers have high academic achievement motivation, which is significantly related to feeling of security.

The negative loadings on variables 4, 5, 6 and 7 indicate that there is a negative relationship between feeling of security and poor social, emotional, home and health adjustments. Thus, this factor can be named as feelings of security.

Factor VI also has positive significant loading only on social adjustment (.44), which indicates that the highachievers tend to have better social adjustment, which is significantly contributing towards highachievement. The negative loadings on other variables, namely, self-concept of ability, achievement motivation, reading speed and comprehension, study habits,

TABLE 5.11
Factor VI—Social Adjustment

Variables	*Factor Loadings*
(1) Social adjustment	.44
(2) Self-concept of ability	—.43
(3) Achievement motivation	—.39
(4) Reading speed and comprehension	—.37
(5) Study habits	—.27
(6) Importance attached to achievement	—.26
(7) Economic problems	—.25
(8) Vocabulary	—.22

attaching importance to achievement, economic problems and vocabulary are negatively related with this factor. This shows that these variables do not share any common element with social adjustment. On the basis of the above discussion, factor VI is named as social adjustment.

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6

Comparison of Under and Highachievers

In the preceding chapter, the factors related to under and high-achievement were interpreted. We will now report the difference found between the under and highachievers on the variables studied and also the difference between the results obtained by the application of the two statistical techniques of factor analysis and 't' test. We will interpret these results variable-wise. The variables have been divided into two parts, academic and non-academic. Under the former, language and study-related skills have been studied and under the latter, the motivational and personality related variables. The results are reported, as follows:

Academic Factors

The underachievers and highachievers were given spelling, vocabulary and reading speed and comprehension test under the linguistic ability variable and study-habit inventory was given to measure the study habits. The results obtained from these tests are mentioned below:

(a) *Linguistic Ability*

Table 6.1 shows that the difference between under and high-achievers on the variables spelling, vocabulary and reading speed and comprehension are highly significant, $P<0.01$. However, the difference on reading speed and comprehension seems to be greater than vocabulary and spelling. All these findings indicate that the underachievers as a group possess poor reading speed

TABLE 6.1

Means, Standard Deviations, Standard Errors, Obtained Difference, Critical Ratio and Significance level of two groups on Language Related Variables

Variables	*HA*			*UA*			*Obtained Differe-nce*	*'t'*	*Signi ficance levels*
	Mean	*SD*	*SEm*	*Mean*	*SD*	*SEm*			
— Spelling	22.22	5.19	.52	17.41	4.25	.43	4.81	7.18	P<.01
— Vocabulary	34.17	8.14	.81	27.26	6.77	.68	6.91	6.52	P<.01
— Reading speed and compre-hension	33.28	8.72	.87	18.74	3.86	.39	14.54	15.15	P<.01

and comprehension, vocabulary and spelling levels, than the highachievers.

TABLE 6.2
Factor Loadings on Language Related Variables

Variables	*Factor Loadings*	
	HA	UA
—Spelling	.69	.09
—Vocabulary	.71	.26
—Reading speed and comprehension	.42	.43

As mentioned earlier, the positive high significant loading on a variable indicates the amount of its contribution separately, towards under and highachievement and insignificant loading, i.e., .19, or below on a variable indicates the insignificant contribution towards under and highachievement. Therefore, the very high significant loadings on spelling, vocabulary and reading speed and comprehension for the highachievers point out, that these linguistic skills are significantly contributing towards highachievement. Similarly, significant positive loadings on vocabulary and reading speed and comprehension for underachievers indicate that these linguistic skills are contributing towards their underachievement. However, the loading on spelling though positive is insignficant. This shows its comparatively smaller degree of contribution. On the basis of above descriptions, we can conclude that underachievers on the whole tend to possess poor linguistic ability than the highachievers.

TABLE 6.3
Means, Standard Deviations, Standard Errors, Obtained Difference, Critical Ratio and Significance Level of Under and Highachievers in Study Habit Scores

Variable	*Mean*	*SD*	*SE*	*Obtained Difference*	'*t*'	*Significance level*
—Study habits						
HA	31.42	32.50	3.25	47.64	9.64	P<.01
UA	—16.22	36.84	3.68			

(b) *Study Habits*

Table 6.3 shows that the difference between under and highachievers on study habit variable is highly significant (P<.01). This indicates that the underachievers tend to possess poorer study habits than the highachievers.

TABLE 6.4
Factor Loadings on Study Habits

Variables	*Factor Loadings*	
	HA	UA
—Study habit	.55	.42

Table 6.4 indicates that the satisfactory study habits of highachievers are contributing (.55) towards highachievement and unsatisfactory study habits of underachievers are contributing (.42) towards underachievement. Thus, we can say that study habits are significantly responsible for differential patterns of achievement. It can, therefore, be concluded that the highachievers on the whole are better in their study related kills than the underachievers.

Non-academic Factors

Motivational Factors: The under and highachievers were given the following tests to measure the motivational factors:

- (i) Bhatia Achievement Motivation test.
- (ii) Academic Motivation Inventory:
  - (a) Self-concept of ability;
  - (b) Importance attached to achievement.

The findings are reported in the Table 6.5.

Table 6.5 shows that the underachievers and highachievers significantly differ on achievement motivation, self-concept of ability and importance attached to achievement. The difference between under and highachievers is greater on achievement motivation than self-concept of the ability, and importance attached to achievement.

The positive significant loadings on achievement motivation, self-concept of ability and importance attached to achievement for highachievers are significantly contributing towards highachievement, which indicates that highachievers tend to possess

TABLE 6.5

Means, Standard Deviations, Standard Errors, Obtained Difference, Critical Ratio and Significance Level of Under and Highachievers in Motivational Variables

Variables	*HA*			*UA*			*Obtained difference*	*'t'*	*Significance level*
	Mean	*SD*	*SEm*	*Mean*	*SD*	*SEm*			
— Bhatia Achievement Motivation	26.10	3.43	.34	24.51	4.26	.43	1.59	2.89	0.01
— Academic Motivation Inventory:									
(i) Self-concept of ability	33.54	4.11	.41	32.01	4.39	.44	1.53	2.51	.02
(ii) Importance attached to achievement	36.75	3.85	.39	36.16	3.63	.36	.59	2.11	.05

TABLE 6.6

Factor Loadings on Academic Achievement Motivation Variables

Variables	*Factor loadings*	
	HA	UA
— Bhatia Achievement Motivation	.56	.25
— Academic Motivation Inventory		
(i) Self-concept of ability	.56	.64
(ii) Importance attached to achievement	.38	.43

high academic achievement motivation, whereas, the positive significant loadings on the above-mentioned variables are significantly contributing towards underachievement, which points out the low academic achievement motivation levels of underachievers.

On the basis of the above descriptions, it can be concluded that the underachievers, in comparison to the highachievers, tend to possess low achievement motivation, poor self-concept of ability, and attach less importance to their grades.

(b) *Personality related factors*: The following tests were given to under and highachievers for measuring the factors related to personality:

(i) Maslow's security-insecurity test.
(ii) Bell's adjustment inventory—it measures the adjustment in the following areas:
(a) Home
(b) Health
(c) Social
(d) Emotional.
(iii) A checklist for measuring the number of problems faced in the following areas:
(a) Family
(b) School
(c) Economic
(d) Recreational.

The findings are reported as follows in the order given on the following page.

TABLE 6.7

Means, Standard Deviations, Standard Errors, Obtained Difference, Critical Ratio and the Significance Levels of Under and Highachievers in Maslow's Security-Insecurity Test Variable

Variable	*Mean*	*SD*	*SE*	*Obtained difference*	'*t*'	*Significance levels*
— Maslow's Security-Insecurity test						
HA	36.78	7.41	.74	2.30	2.05	.05
UA	39.28	8.13	.81			

Table 6.7 indicates that the underachievers have scored significantly higher ($P < .05$) than the highachievers. As higher score is indicative of feelings of insecurity, the underachievers in comparison to the highachievers tend to feel more insecure.

TABLE 6.8

Factor Loadings on Maslow's Security-Insecurity Variable

Variables	*Factor loadings*	
	HA	UA
— Maslow's security-insecurity test	.47	.48

The higher positive significant loadings on this variable for both high and underachievers indicate the significant contribution of this variable, towards the occurrence of high and underachievement.

From the above descriptions, we can conclude that the underachievers possess more feelings of insecurity than the highachievers.

Bell's Adjustment Inventory

Table 6.9 shows the significant difference between under and highachievers on their adjustment patterns on all the

TABLE 6.9

Means, Standard Deviations, Standard Errors, Obtained Difference, Critical Ratio and Significance Levels of Under and Highachievers in Bell's Adjustment Inventory

Variables	*HA*			*UA*			*Significance difference*	*'t'*	
	Mean	*SD*	*SE*	*Mean*	*SD*	*SE*			
Bell's adjustment inventory									
(a) Home	5.43	3.95	.40	5.90	3.44	.34	.47	0.85	NS
(b) Health	6.50	4.02	.40	7.34	4.17	.42	1.84	1.45	NS
(c) Social	10.51	3.71	.37	10.85	4.69	.47	.34	0.59	NS
(d) Emotional	10.04	5.38	.54	10.93	5.29	.53	.89	1.17	NS

four dimensions. This points out that underachieving girls and highachieving girls in rural setting do not differ much in their home, health, social and emotional adjustment. However, the underachievers have score higher than the highachievers in all the four areas and it may be pointed out that higher score is indicative of more adjustment problems.

TABLE 6.10

Factor Loading on Bell's Adjustment Inventory

Variables	*Factor loadings* HA	UA
— Bell's adjustment inventory:		
(a) Home	—.10	.21
(b) Health	—.16	.25
(c) Social	.44	—.03
(d) Emotional	—.02	—.10

The only significant positive loading (.44) on social adjustment for the highachievers indicates that the social adjustment is significantly contributing towards highachievement. The insignificant negative loadings on home, health and emotional adjustment for the highachievers indicate that these variables are insignificantly contributing towards highachievement. The positive significant loadings on home (.21) and health (.25) show that poor health and home maladjustment of underachievers are significantly contributing towards their underachievement. However, the insignificant loadings on social and emotional areas indicate the insignificant contribution of these variables towards underachievement.

On the basis of the above discussion, we can conclude that though the difference between under and highachieving girls in their adjustment patterns is not significant, social adjustment (.44) contributes significantly towards highachievement, while home maladjustment (.21) and poor health conditions (.25) contributes towards underachievement.

Checklist

A perusal of Table 6.11 shows that while the under-

TABLE 6.11

Means, Standard Deviations, Standard Errors, Obtained Difference, Critical Ratio and Significance Levels of Under and Highachieving Groups in Checklist Variables

Variables	*HA*			*UA*			*Obtained difference*	'*t*'	*Significance levels*
	Mean	*SD*	*SE*	*Mean*	*SD*	*SE*			
— Checklist:									
(a) Family	9.98	5.95	.60	12.30	9.24	.92	2.32	2.10	0.05
(b) School	8.47	7.56	.76	12.37	11.11	1.11	3.90	2.87	0.01
(c) Economic	5.24	3.84	.38	6.65	7.12	.71	1.41	1.78	NS
(d) Recreational	6.20	4.23	.42	6.30	4.41	.44	.10	0.16	NS

and highachievers differ significantly in the extent of problems, perceived in the areas of family ($P<.05$) and school ($P<.01$), the difference between them in the economic and recreational areas is insignificant. However, though insignificant the underachievers face more number of problems in economic and recreational areas.

TABLE 6.12

Factor Loadings on Checklist Variables

Variables	*Factor loadings*	
	HA	UA
—Checklist		
(a) Family	.54	.66
(b) School	.14	.76
(c) Economic	.11	.49
(d) Recreational	.17	.48

Table 6.12 indicates that for the highachievers the only significant positive loading is on the family dimension, which indicates that they have lesser problem in this area and this factor is significantly contributing towards highachievement. The loadings for school, economic and recreation areas are insignificant. This indicates the insignificant contribution of these variables towards highachievement. In the case of underachievers, there are high significant loadings for all these four, which show that the underachievers tend to face there more problems. However, of all these four areas, on school (.76) and family (.66), the loadings are comparatively much higher than on economic and recreational areas. This indicates that the underachieving girls in rural areas face relatively more problems in schools and family than in economic and recreational areas. And a perusal of Table 6.12 shows further that, while for the the underachievers, the factor loadings on all the four areas are positively significant, for the highachievers it is true only for the family area. On the other hand, the results of the 't' test indicate that the difference between the high and underachievers is significant only for the areas of family and school. However, the factor loadings for the areas of school (.14), economic (.11) and recreation (.17) in the case of highachievers

fall short of the significant level which is on and above (.19). Similarly, the underachievers face comparatively larger number of problems in all the four areas. Therefore, the higher loadings for underachievers are generally in tune with the results arrived at by the application of 't' test.

Thus, from the Tables 6.11 and 6.12, we can conclude that the disadvantaged talented rural girls as a group tend to possess a greater number of problems than their counterpart high-achievers.

7

Discussion and Conclusions

From the findings mentioned in earlier chapters, it can be concluded that underachievers as a group, differ significantly from that of highachievers, and that their achievement is adversely affected by factors, like poor linguistic ability, planning of study, academic motivation and adjustment patterns. On the contrary, highachievers are superior to them on all these factors, which help them achieve high. Now, we will discuss these findings with their implications under the following subheadings:

1. Academic achievement motivation and underachievement
2. Linguistic ability and underachievement
3. Planning of study work and underachievement
4. Adjustment and underachievement
5. Emotional insecurity and underachievement.

1. Academic Achievement Motivation and Uderachievement

Academic achievement motivation is found to be a significantly contributing factor towards the differential pattern of achievement.

The highly significant loadings on self-concept of ability, importance attached to achievement and achievement motivation for underachievers indicate that the underachievers tend to possess a poor self-concept of their high ability to do well academically, attach less importance to achievement and have very less achievement motivation for life. On the other hand, the highly significant loadings on self-concept of ability, importance attached to achievement and achievement motivation for high achievers show that highachievers are not only highly motivated to achieve in life, but their achievement motivation is sufficiently strengthened by their positive self-concept of ability to do well academically and the importance they attach to high academic achievement.

The 't' values indicate a significant difference between the under and highachievers in achievement motivation ($p < .01$), self-concept of ability ($p < .02$) and the importance attached to high achievement ($p < .05$). Of these three variables, the difference between the two groups in their achievement motivation is the largest, followed in order by their self-concept of ability and importance attached to achievement.

Though all the differences are significant, the degree of difference between the two groups on these three variables needs explanation. Achievement motivation is a broad generic term, which refers to the strength of motivation to achieve one's academic goals or otherwise in life. It imitates, directs and sustains behaviour towards goal attainment with general motivation to excel others. Such individuals are persistent in their efforts and the general motive to approach success is stronger, than the motive to avoid failure. The other two variables, self-concept of academic ability and importance attached to high academic achievement, measures the strength of motivation in a limited area, i.e., academic achievement. It appears, that the highachievers' strength of general motive to achieve high in any walk of life is much stronger than that of underachievers, who perhaps negatively reinforced by their poor achievement and other factors have lowered down their general motivational level to achieve their aspired goals, whether academic or non-academic. However, they continue to attach importance to high achievement and also are not completely unaware of their ability to do well academically, though obstructed by several other factors, they are not able to translate them in actual achievement. This explains why the margin of difference goes on reducing when it comes from general to specific.

For both the groups of under and highachievers, all the factor loadings on the three variables are significant, which show that they are significantly contributing towards high and under-achievement. However, once again the degree of contribution of the three variables towards either under or highachievement differs. For the high achievers, both self-concept of ability and achievement motivation are equal in their high contribution, but the contribution of both is more than that of importance attached to academic achievement. For the underachievers, the highest contribution is from their poor self-concept of ability to do well academically, followed in order by less importance they attach to achievement and poor achievement motivation.

Except for the degree of difference between the two groups, under and highachievers, on the three dimensions of motivation, achievement motivation, self-concept of ability and importance attached to achievement, and the extent of contribution to the differential achievement patterns by each of them, the findings of 't' test and factor analysis are similar, since all these three variables are both significantly contributing and differentiating between the two groups. While in the case of highachievers, the contributions of highachievement motivation and self-concept of ability are highest, in the case of underachievers, it is their poor self-concept ability to do well academically. However, both the findings of 't' test and factor analysis are completely in agreement about the role of importance attached to high academic achievement. The margin of difference on this variable between the two groups is relatively narrowest ($p < .05$). Similarly, in both the cases of under (.43) and highachievement (.38), the contribution of this variable though significant, is comparatively less. This shows that both the groups do not attach much importance to high academic achievement. The less importance attached to highachievement by the underachievers is understandable, since consistency is negatively reinforced by their poor achievement. The underachievers have not only lowered down their achievement motivation, but have also accepted their achievement motivation and have also accepted their poor achievement revealed by the less importance they attach to achievement. However, in the case of highachievers, it is surprising since positively reinforced by their highachievement, they ought to have attached highest importance to high academic achievement, particularly when their general motivation level to achieve high and confidence in their ability to do so are so strong. To find an explanation for this tendency, we will have to take into account their environmental influence, which is rural in character. The ethos of rural is qualitatively different from the urban one, particularly for girls.

The social values to which both these high and underachievers are conditioned do not place high premium on academic achievement specially for girls, who are supposed to shine not academically but in family life. The girls are expected to be married soon after they have minimum of exposure to formal education and what is more important for them, is to excel in household activities, in which parents and the society take pride, and not in fetching good marks in school examinations. The girls, therefore, whether high or underachievers, conform to social values and do not attach much importance to academic achievement. However, the general motivation to achieve in other walks of life and self-concept of ability are high in high-achievers, which may be translated in excelling others in socially conditioned and valued goals of life. The underachievers by attaching less importance to achievement are also reflecting the same social values. Their low level of general motivation and self-concept of ability might have been due to other factors, which tog ther may have affected their academic achievement, which in turn may have acted as negative reinforcement for the development of their general motivational level and the self-concept of ability. What we want to emphasize is the complex nature of the problem of underachievement, which is influenced by a network of forces.

On the basis of these findings and the above discussion, the profile of underachievers emerged very clearly. In comparison to the highachievers, the underachievers have low achievement motivation and poor self-concept of ability. This shows, that they are unaware of their hidden but high potentiality and have a tendency to underrate themselves, which create a gap between real and estimated self. It is difficult to assign reasons for this process of devaluation, which as already suggested, may be the product of network of forces including the personality matrix. It only shows that what appears on the surface, i.e., the under-achieving behaviour of the pupils has deep-rooted underlying patterns. This process of slow devaluation has considerably crippled the scholastic expectations of future academic success. The academic world holds not much of praise for them, at least underachievers think so and therefore, they fail to find their ego satisfaction through their academic achievement, which may lead to the rejection of achievement in the frame of reference of the underachievers. This process devalues the very social and academic status of achievement for them, which may also partly be one of the reasons for attaching less importance to academic achievement by them. In a sense, it has possibly lost much of the flavour which society attaches to academic achievement. They are further strengthened in this devaluation of achievement by this conforming to social value of rural culture, as discussed above. It is believed, that in order to maintain a degree of emotional homostatis, the underachievers lower their levels of aspiration and reduce any desire for academic achievement. Such behaviour is necessary to maintain an integrative personality. But in the present investigation aspiration level is found to be significantly associated with the highachievement. The under and highachieving girls on the whole depict that the underachievers differ significantly from highachievers in their self-concept of ability, in attaching importance to grades and in their aspiration levels. Thus, the underachieving girls tend to possess low academic achievement motivation and the high-achieving girls tend to possess high academic achievement motivation levels.

The implications of these findings are that academic achievement motivation is an independent factor, which is not influenced by the intelligence, but it does influence significantly the achievement patterns. This factor has been found to be significantly contributing towards underachievement but the other environmental factors are so much interrelated, that it is difficult to say that this factor alone contributes towards achievement.

2. Linguistic Ability and Underachievement

The poor linguistic ability is found to be another significant factor influencing academic underachievement. The very high significant loadings on vocabulary (.71), spelling (.69) and reading speed and comprehension (.42) for highachievers are indicative of the fact that good vocabulary, spelling and reading speed and comprehension are dominant factors that contribute towards their highachievement. The signficant loadings on reading speed and comprehension (.43) and vocabulary (.26) for underachievers indicate that their poor reading speed and comprehension and their limited vocabulary significantly contribute towards underachievement. Spelling has also emerged as a significant factor

(.37) for the underachievers in combination with the factor of poor planning of study work.

A closer look at the degree of contributions made by each dimension of linguistic ability will throw light on a few trends. Firstly, it shows that the positive contributions of factors like vocabulary, spelling and reading are much more in the case of highachievers than their negative presence in the case of underachievers, though all the contributions are significant. This indicates that the phenomenon of underachievement, though poor knowledge of spelling and vocabulary and poor skills of reading are contributing their shares, is more the product of a set of other factors, with which the factor of linguistic ability also combines to make a student achieve not up to the level of expected achievement. It has already been emphasized that underachievement is a complex problem, made possible by the interplay of both surface and depth factors. The linguistic skills may be the surface factors. It is possible that the motivational and the personality related factors, conditioned by the social and family ethos and values, might have introduced the rot, leading to a slow devaluation of academic values in the eyes of the underachievers, leading to a sort of at least mental withdrawal from the academic world, which might have slowly introduced the surface factors like poor linguistic skills and methods of study, which in turn further reinforced their choice of poor achievement. However, in the case of highachievers the contribution of these surface factors show that the positive contributions of depth factors are not enough for achieving high only, but a student has also to be strong in linguistic skills and methods and planning of study.

Secondly, in the case of highachievers, better skills of reading speed and comprehension are contributing less to their highachievement, than good knowledge of vocabulary and spelling. This is a little surprising, since the highachiever girls who are so well helped by their correct knowledge of spelling and good store of vocabulary are expected to be facilitated to a similar extent by their reading skills. Moreover, reading skill is a composite skill, for which a good store of vocabulary is also needed. And it is reasonably expected that the two skills of language, reading and writing, of which spelling is a part are positively and highly related. The only explanation that seems to be plausible is the general apathy shown to the development of reading skills in our formal system. Reading is a complex skill, because it is the process of getting meaning from the printed page and as bringing meaning to it. The factors which determine reading speed and comprehension are the purpose of reading; the reader's familiarity with the content or related concepts; the kind of material read and its difficulty; and amount of thought given to the content while reading the amount of lip movement while reading the extent of practice in silent reading and ability to grasp meaning readily as measured in part by reaction time of association of ideas. Moreover, reading speed and comprehension have been found to be dependent more upon general vocabulary, concept formation and organisational capacity than upon perceptual factors. For the proper development of such complex higher level skills, there is no systematic training and teaching and it is taken to develop as a matter of course. In this context, the condition of rural schools is really deplorable, and therefore, even the highachievers from that set up have not developed good reading skills.

If we look at the total score of the high achievers on these three tests, the fact will be further evident. They have scored 22.22 out of 40 on spelling, 34.17 out of 56 on vocabulary and 33.38 out of 75 on reading speed and comprehension test. The highachievers, therefore, have scored even less than 60 per cent on these lests, which show their moderate level of linguistic skills. Their score on reading speed and comprehension is even less than 45 per cent of the total score. The highachievers in this study scored, 25.18, 42.45 and 45.08 on spelling, vocabulary and reading speed and comprehension tests respectively. The corresponding figures for underachievers were 17.42, 31.00 and 33.08. A perusal of these scores shows that even the urban highachieving boys did not score very high showing that even their reading skills were not fully developed. A comparison of this data with those of the present highachieving girls would show that they are closer to the urban underachieving boys than to their highachieving counterparts. This shows the sad state of affairs in regard to the development of reading skills (including spelling and vocabulary) of pupils in our secondary schools, particularly those in rural schools. As pointed out earlier, the highachieving girls have comparatively done better on spelling and vocabulary tests, than on reading speed and comprehension. This as explained may be due to lack of any systematic training for developing reading skills. Moreover, it is possible that the regular systematic hours devoted to their study work by the high-achievers helped them to learn correct spellings and develop stock of words. Lack of any training, however, did not systematize and unify all these skills to develop into a composite reading skill, leading to better reading speed and ability to derive meaing from the printed pages.

The underachievers in comparison to the highachievers, perform still poorly. The differences between them and the highachievers on all the three dimensions of linguistic ability are highly significant. Therefore, the findings arrived at by the application of factor analysis and 't' test are similar. On the whole, the underachievers emerge as a group possessing limited vocabulary, poor spelling and reading speed and comprehension. Their total scores on vocabulary, spelling and reading speed and comprehension are 27.26, 17.41 and 18.74. They have, therefore, on the whole scored even less than 45 per cent on these tests. This not only shows all-round poor linguistic skills possessed by the underachieving girls, but also the poor state of affairs in regard to the development of linguistic skills in the village schools.

To conclude, the present findings point out that the underachievers possess poor reading speed and comprehension and have limited knowledge of vocabulary and spelling, all combining together to hamper academic achievement. On the contrary, the comparatively better linguistic ability is facilitating the highachievers to achieve high.

3. Planning of Study Work and Underachievement

Planning of study work is found to be significantly related to the differential patterns of achievement.

The significant high loadings on study habit inventory (.42) and on spelling test (.37), for the underachievers indicate that poor study habits and poor knowledge of spellings are significantly contributing to underachievement, (cf. Table 5.3). The significant high loadings on the study habit inventory (.55) and reading speed and comprehension (.27) show that satisfactory study habits and good reading speed and comprehension of highachievers are contributing significantly towards highachievement (cf Table 5.8).

The 't' test indicates (cf. Table 6.3) that the difference in the mean study habit scores of under and highachieving girls is highly significant ($p < .01$). This shows that the underachievers tend to poorly plan their study work. The findings of factor analysis and 't' test are, therefore, supporting each other.

The study habit inventory measures as a whole, the method and attitude of a student towards study. Under method and attitude towards study are included various aspects of study-related factors, like note taking capacity and comprehending the main points, mental review of the facts studied, capacity to concentrate the mind on the things being studied, proper motivation for study, hours of study and proper distribution of time on the subjects to be studied, capacity to resist distractions, nervousness at the time of examinations, proper planning of time and framework of answers while taking the examinations and other such factors. The underachievers in comparison to the highachievers possess poor study habits, the highachievers, on the other hand, have developed good study habits, which positively influence their achievement. The underachievers lag behind on the two important aspects of study—firstly study planning of time and preparation of the ensuring examination, and secondly, skills of examination. It appears, they devote less time to study, and even that is not properly planned and distributed. Not only that, they are also not able to concentrate and are unable to resist distractions at the time of study. Thus, they are poorly prepared for their examinations, which make them nervous at the time of examination. Moreover, they cannot also plan their answers well, and distribute the limited time available on each question. All these explain their poor achievement.

The factor analysis study in the case of underachievers has shown significant loadings on two variables, study habit and spelling which have together been named as poor planning of study work (cf. Table 5.3). It appears that since underachievers devote less time to study and as even those limited hours do not attract full concentration and proper planning, they neither give complete attention to the orthographic aspect nor do they practise writing the material read. Both these make their spellings very weak. On the contrary, the significant loading on reading speed and comprehension of highachievers on Factor-III (cf. Table 5.8) indicates that the role of good reading speed and comprehension is not only limited as a linguistic ability influencing achievement, but it also helps the students to develop other skills, as healthy and good study skills in this case, which further help the highachievers to achieve high grades in schools.

On the basis of the above discussion, it may be concluded that the underachievers are poor in their study-related habits, which negatively influence their academic achievement. On the contrary, the highachievers possess better study habits, which help them achieve high grades. Study habits and achievement are, therefore related.

Adjustment and underachievement

As indicated earlier the adjustment patterns of highachievers and underachievers were measured in two ways. First, Bell's adjustment inventory measuring adjustments in home, health, social and emotional areas, was administered. Secondly, a checklist was given, which contained list of possible problems faced by a student in four areas of life, namely family, school, economic and recreational. The factor analysis study indicates highly significant loadings on all the four areas—school (.76), family (.66), economic (.49) and recreational (.48), included in the checklist (cf. Table 5.4). It means that the underachievers have to face a lot of problems in all the important areas of life and which come in their way of successful academic adjustment, i.e., they are not able to achieve high, despite the potentiality to do so. Analysis of the degree of contribution of each area will show that with the underachievers, the school followed by the family creates the biggest hurdle. Comparatively speaking, the economic and the recreational areas do not create difficulties for them to the extent the school and family related problems do. The stories of underachievement, therefore, may be found in the family and school of the underachievers, who have contributed their maximum shares in introducing the underachieving trend in the child. One point may be made clear here. Simply having a large number of problems in life does not mean maladjustment. Checklist only gave a picture of the problems faced by the two groups, but not their respective adjustments. This part was done by Bell's adjustment inventory. The loadings are significant for only two dimensions, health (.25) and home (.21) and the degree of contributions is also moderate. This shows that faced by so many problems, the underachievers have moderately developed some maladjustment in home and health dimensions, which are affecting their academic adjustment, but it is not so pronounced. True, they are surrounded by a large number of problems, which are coming in their way of high achievement, but the impact on personality of these problems is not to the extent, as could be expected from the large number of problems they are surrounded with. The highachievers, on the other hand, have not to face many problems and in fact, the lesser number of problems they face in family life is positively helping them to achieve high (cf. Table 5.9). This way they are different from underachievers. The problems faced by them in other areas of life like school, recreation and economy have not significant loadings on them, meaning thereby that they are neither positively nor negatively influencing their highachievement (cf. Table 5.9). They are neutral and, therefore, do not matter. It is a significant trend that none of the discussions of Bell's adjustment except good social adjustment, which is contributing positively and significantly to the highachievement, have emerged as significant contributors. They are neutral in their contribution. It appears, therefore, that the underachievers have to encounter larger number of problems of comparison to the highachievers, and they are comparatively also less adjusted than them. But, on the whole, this lack of adjustment in underachievers is not very heavily pronounced and is at best only moderate, as indicated by the moderate degree of their contributions to their underachieving behaviour. It is true that emotional maladjustment (cf. Table 5.5) has emerged significant with other factors identified as emotional insecurity, but once again, its degree of contribution (.38) is less than the contribution made by other variables, like poor self-concept of ability (.64), (cf. Table 5.1), large number of problems faced in school (.76), family (.66), economic (.49) and recreational (.48) areas of life (cf. Table 5.4), less importance attached to achievement and poor reading speed and comprehension (.43), (cf. Table 5.2). It may, therefore, be concluded that though personality-related problems and maladjustment contribute their shares, other factors are comparatively more important in making a student achieve below their level of potentiality.

The results of the 't' test not only support the above trend, but make the above-noted trend absolutely clear also. On none of the dimensions of Bell's adjustment inventory a significant difference has been found, indicating that the high and underachievers do not differ significantly in their adjustment, that the discrepant achievement patterns, as revealed by factor analysis study, are not one of the major variables related to achievement (cf. Table 6.9 & 6.10). However, on the number of problems encountered, a significant difference has been found only for family and school areas (cf. Table 6.11). This is also supported by the factor-analysis study where existence of a large number of family and school-related problems are among the highest contributors to the underachieving behaviour of the underachievers (cf. Table 6.12).

Needless to mention, that this study reveals the trend found in rural schools, which are, as already pointed out earlier, are qualitatively different from the urban schools. Most of the studies mentioned, had studied urban sample from urban schools and that also mainly consisting of boys. It appears that the rural girls living under the values and ethos of rural culture are socialised to be conforming and accept generally with equanimity, the way life presents itself to them. The implications of these findings are that underachievers face more problems and have poor health conditions, which cripple their academic potentialities to achieve high grades. On the contrary, the highachievers tend to face less problems and are socially better adjusted which facilitate the highachievers to achieve high grades.

Emotional Insecurity and Underachievement

High scores on Maslow's security-insecurity test, which was administered on the two groups of high and underachievers, indicate the presence of emotional insecurity, feelings of being isolated, disturbed, rejected, self-condemnation, threat, pessimism, guilt, conflict, anxiety and other such feelings. The 't' test indicates a significant difference ($p < .05$), between the two groups on this test. The underachievers tend to possess the general traits of insecurity significantly more than the high-achievers, though the difference is not highly significant. As discussed earlier, personality in comparison to other variables, only moderately influences discrepant achievement patterns in this setting. This trend is supported by the findings on this test also, which does not indicate a highly significant difference. In agreement with the findings on the other dimensions of personality, the h ighachievers continue to be relatively more free than the underachievers from the personality-related problems. The underachievers, however, realise a greater number of problems, which adversely influence their achievement.

Earlier no significant difference was found between high-achievers and underachievers on the four dimensions of Bell's adjustment inventory. However, the difference on security-insecurity test is significant. This raises the question of relationship between the two tests, i.e., Bell's adjustment inventory and Maslow's security-insecurity. The underachievers, who feel emotionally more insecured than the highachievers do not differ in their patterns of adjustment on four important dimensions of life, home, health, social and emotional. The girls particularly from this culture are more conforming and there is a general acceptance of the social values. They are, therefore, free from the stresses and strains of urban life, which do not spare at least those who are susceptible and predisposed to develop adjustment problems. The urban underachievers, because of the several problems they face in life are unable to maintain their full pose and balance and show not only intense traits of emotional insecurity, but far less adjusted than the high achievers on the four important dimensions of life. It is a fact, that the underachieving girls of this study face significantly greater number of problems than the highachieving ones in the family, school, economic and recreational areas of life. Factor analysis shows highly significant loadings in all the four areas, which means that they adversely affect their achievements. But these problems have not succeeded in producing any maladjustment in the four dimensions, measured by Bell's adjustment inventory and there is no singificant difference between them and the highachievers in this regard. However, it appears that these problems have succeeded in producing only a little emotional insecurity in the underachievers (cf. Table 6.7), though the difference between them and the highachievers is significant at the lowest level of significance. Therefore, the trend is very clear. The girls from rural settings, whether underachievers or highachievers are comparatively more free from personality-related problems, whose influence on the underachievers is only marginal and that too confined to the level of feelings of insecurity and the related emotional maladjustment.

The results of the factor analysis generally support the findings arrived at by the application of the 't' test. For the underachievers emotional insecurity has emerged as a significant factor comprising significant loadings on feelings of insecurity (.48) and emotional maladjustment (.38) (cf Table 5.5). With this factor, significant loading has also been found for poor self-concept of ability (.37), poor achievement motivation (.34) and less importance attached to achievement (.23). No significant difference was found earlier between the underachievers and the highachievers on emotional dimension of Bell's adjustment inventory, but significant loading has been found on this variable in company with the feeling of insecurity. This is not surprising, since feeling of insecurity is an emotional problem, and the two —insecurity and emotional maladjustment emerge related, when the data is analysed separately for the underachievers. For the highachievers also, there is significant loadings on feelings of security (.47) (cf. Table 6.8). Other variables, which have emerged significant in the company of the general factor, feeling of security are achievement motivation (.41) and self-concept of ability. This is very similar to the factor loadings for the underachievers. The feeling of insecurity-security is positively related to not only emotional maladjustment as in the case of underachievers, but also to the motivational variables, like achievement motivation and self-concept of ability. It has already been pointed out earlier, that personality dynamics and the motivational factors act as related depth factors, which influence the surface factors like study-related methods and attitudes and general linguistic ability, which in turn influence the depth factors. This inter-influence creates a vicious circle for the underachievers. The implications of the findings are that the underachievers tend to feel more emotionally insecure and isolated than the highachievers. The factors responsible for their emotional insecurity, which is found to be significantly contributing towards underachievement, cannot be underlined entirely on the basis of this study, which only points out that inspite of equal ability levels, underachieving girls could not achieve as high as the high achieving girls and the traits of which may be one of the factors contributing towards that.

Conclusions

On the basis of the above discussion, the following profiles of under and highachievers emerge.

(1) The underachieving girls in comparison to the high-achieving ones are poorer not only in linguistic ability and study habits but also in their motivation to achieve high and in their general and specific adjustment patterns. Thus, they possess poor spelling, vocabulary and reading speed and comprehension. They have low achievement motivation, poor self-concept of ability and attach less importance to achievement. They are also characterized with more feelings of insecurity and have to face greater number of problems in different areas of life like school, family, recreation, economic, etc.

(2) The highachieving girls, on the other hand, are better equipped with linguistic ability and study habits and are better both in motivational and personality-related factors. They possess better spelling vocabulary and reading speed and comprehension. Their achievement motivation and self-concept of ability are high. They have less feelings of insecurity and also face less number of problems in different areas of life and are socially better adjusted than their counterparts.

The above descriptions would show that both academic factors like linguistic ability and study skills and non-academic factors like motivation and personality contribute to high and underachievement. Therefore, high and underachievement is not related to only one factor, e.g., linguistic ability, low motivation to achieve may not alone be influencing the achievement patterns. Several factors combine together to make the others achieve at par with her ability and make the others achieve below their expected levels of achievement. The question arises, what is the relationship between these factors. And how they inter-act together to make students under highachievers, e.g., if a student has lower motivation to achieve, will he have poor linguistic ability and poor methods of study. Conversely, if a pupil has high motivation to achieve, will he be also better in study and linguistic skills and possess high self-concept of ability.

The results showed that all the variables correlated significantly with each other except reading ability and total adjustment, which were negatively and insignificantly correlated. Significant positive correlation was found between study habits, reading ability and academic motivation. All these factors were significantly negatively correlated with measures of personality. Thus, from Srivastava's study it clearly emerged that those who are poorly adjusted are more insecure and have more problems have also relatively poorer reading and study skills and have low academic motivation, a picture which fitted in very well with the profile of the underachievers. Thus, academic achievement is a dynamically complex process, which is related to a network of interrelated forces that influence achievement concert. Accordingly, the problems of the underachievers are manifold. Their poor achievement may be related to various factors, which may simultaneously be present in them, e.g., a student possessing poor study habit may also possess poor reading ability, poor academic motivation, and may also be poorly adjusted to the various problems of life. Apparently, his poor achievement may be a function of her poor study habit and reading ability, but inwardly it may be related to the motivation and personality of the individual.

It may be concluded on the basis of this study that the underachieving rural girls were handicapped by several factors, which are interrelated and combine together to make her achieve lower, than what is expected of her on the basis of her aptitude based expectation. As a result, any remedial programme, if it attempts to remove one handicap like poor linguistic skills, would not succeed, unless a global approach is made towards the problem, either for diagnostic or remedial purposes.

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WOMEN : Tradition and Culture
—Malladi Subbamma

Women have adopted different attitudes towards their sta devised various programmes to ameliorate their condition and attain emancipation. Feminism takes different hues depending upon the clime and the country. From liberal feminism to radical feminism—all views find support in a country of India's size.

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Malladi Subbamma, a rebel, is a crusader for women's emancipation. During the last two decades she has gained recognition as a journalist, writer and orator. Agitator for a just cause, propagandist for a rational and scientific outlook, a feminist and a humanist, her activities range from literature to politics. Writing in Telugu, she has published nine volumes of essays, six novels, a book of short stories, and two critical studies on Islam and Christianity. At present she is Chairperson, Indian Radical Humanist Association.

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